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CENTRAL INTELLIGENCE AGENCY

WASHINGTON 25, D. C.

OFFICE OF THE DEPUTY DIRECTOR (INTELLIGENCE)

11 MAR 1963

Lt. Col. George W. Carrington, Jr., USMC
Aide to the Chairman
The Joint Chiefs of Staff
Washington 25, D. C.

Dear Colonel Carrington:

This is in response to your request of 4 March for data on the share of defense expenditures in US gross national product comparable to the data shown in our report for the USSR. The attached tables (Tables 1 and 2) present the relevant measures for both the US and USSR. As indicated in Table 1, defense expenditures in 1962 were about one-tenth of GNP in both countries.

This measure of relative burden is very broad and may not be very useful in fixing the real impact of defense expenditures on the two economies. Tables 3 and 4 give alternative measures which we believe in important respects are more indicative of the impact of defense. These are (1) purchases by the defense establishment from the non-agricultural part of the economy, and (2) purchases of durable goods by defense.

Sincerely,

Ray S. Cline

Ray S. Cline
Deputy Director (Intelligence)

Enclosures: (4)
As stated above.

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NND 951154-558

MAR 1963

Table 1: Comparison of USSR and US Defense Expenditures Expressed as a Share of Gross National Product and Annual Rates of Growth, 1955-62 a/

	1955	1956	1957	1958	1959	1960	1961	Percent 1962
I. Defense as a share of GNP								
USSR: Defense expenditures as a percent of GNP	12.7	11.3	9.8	9.3	9.3	9.2	9.5	10.0
US: Defense expenditures as a percent of GNP	10.2	10.0	10.5	10.5	10.1	9.5	9.9	10.2
II. Annual rates of growth								
USSR: Annual rate of growth of defense expenditures	N.A.	-3.3	-10.3	4.6	8.8	4.0	5.8	10.4
US: Annual rate of growth of defense expenditures	N.A.	-1.1	4.9	-1.7	0.4	-4.1	4.0	9.2

a. Values underlying the percentage data in this table are expressed in adjusted factor cost. For details concerning dollar values of US defense expenditures, see Table 2. For details concerning ruble values of USSR defense expenditures, see Table 2, page 10, of Trends in the Soviet Economy, ER 63-2, February 1963.

NND 951154

MAR 1963

Table 2: US Defense Expenditures as a Share of Gross National Product (GNP) and Annual Rates of Growth, 1955-62

	Values in Billions of Dollars							
	1955	1956	1957	1958	1959	1960	1961	1962
I. Defense as a share of GNP								
Defense expenditures (Current prices) a/	36.9	38.6	42.3	42.7	44.4	43.7	46.5	50.8 b/
GNP	362.2	385.2	404.4	406.0	440.6	457.7	469.8	500.0 b/
Defense as a share of GNP (Percent)	10.2	10.0	10.5	10.5	10.1	9.5	9.9	10.2
II. Annual rates of growth of defense								
Defense expenditures (Constant prices) c/	45.5	45.0	47.2	46.4	46.6	44.7	46.5	50.8
Annual rate of growth (Percent)		-1.1	4.9	-1.7	0.4	-4.1	4.0	9.2

a. For purposes of comparison with expenditures of the USSR, certain adjustments have been made in the series of defense expenditures published by the Department of Commerce. The primary adjustments are the exclusion of changes in stockpiles of strategic materials for defense purposes and expenditures for civil defense. The dollar series for both GNP and defense are adjusted to a factor cost basis by excluding indirect taxes.
b. Preliminary estimate based on data in the Economic Report of the President, January 1963, and annual US budget reports.
c. Defense expenditures are expressed in constant prices (1962 prices) by use of the implicit price deflator for Defense published by the Council of Economic Advisors.

NND 951154-

Table 4: Comparison of Production of Military Durables in the US and USSR to Total Production of Durables 1961 and 1962

	1961	1962
I. USSR (Billions of Rubles)		
Military durables	8.8	10.0
Total production of durables	24.8	27.2
Military durables as a share of total durables (Percent)	35.5	36.8
II. US (Billions of Dollars)		
Military durables	23.8	26.1 a/
Total production of durables	94.0	106.2 a/
Military durables as a share of total durables (Percent)	25.3	24.6

a. Preliminary estimates based on data in the Economic Report of the President, January 1963, and annual US budget reports.

NND 951154-56

MAR 1963

Table 3: Comparison of USSR and US Defense Expenditures (Excluding Subsistence) to Gross National Product (Excluding Agriculture) at Factor Cost 1961 and 1962

	1961	1962
I. USSR (Billions of Rubles)		
Defense expenditures (excluding subsistence) a/	15.0	16.7
GNP (excluding agriculture)	104.4	109.6
Defense expenditures as a share of GNP (Percent)	14.4	15.2
II. US (Billions of Dollars)		
Defense expenditures (excluding subsistence) a/	44.9	49.0 b/
GNP (excluding agriculture)	452.4	488.6 b/
Defense expenditures as a share of GNP (Percent)	9.9	10.0

a. Subsistence includes food and clothing expenditures for the armed forces.
b. Preliminary estimates based on data in the Economic Report of the President, January 1963, and annual US budget reports.

NND 951154-562

Under Khrushchev's restless and vacillating leadership, yet another comprehensive reorganization of the administration of industry and agriculture was proposed in November 1962. The proposed changes call for somewhat more centralization of the government apparatus along with a more active participation by the Party in economic affairs. Although the full details of the change have not yet been published, it appears to be essentially an administrative reshuffling that does not tackle the basic weaknesses of the economic system.

The strains on the domestic economy are increased -- but only to a small degree -- by the use of resources in the Soviet trade and aid program. The net use of resources involved is only a fraction of 1 percent, although the skilled technicians, modern machinery, and, in some instances, weapons sent abroad are the same high-quality resources for which competition is so keen at home. It is believed that the potential political and military gains from the trade and aid program will continue to be quite large relative to the cost in resources and that the USSR will assign high priority to this activity when exploitable soft spots appear in the non-Communist world.

In the aftermath of Cuba it is difficult to judge what allocation policies will emerge in the next few years. There is strong incentive for the Soviet leadership (and strong pressure from military advisers) to keep up or catch up in the arms and space races. The Soviet leaders must be acutely aware, however, that the arms and space races are penalizing Soviet economic growth more than these races penalize US growth. Rapid economic growth aimed at catching up with the US is a fundamental long-run Soviet policy, which the leadership will be reluctant to sacrifice to an inconclusive military buildup for very long. Furthermore, the Soviet people are chafing increasingly under the inability of their government to provide better quality food, decent housing, and more consumer durables. Although the most sensible economic policy in this situation might seem to be a firm restraint on expenditures for current buildup of weapons, it is impossible to judge precisely either the way in which the leadership will weigh its alternative opportunities or the degree of rationality that it will bring to the making of the major allocation decisions.

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I. General Trends, 1950-61

The Soviet economy was characterized by rapid growth in the period 1950-61, but rates of growth have declined recently -- in industry since 1955 and in agriculture since 1958. The major trends in the economy are presented in Tables 1, 2, 3, and 4* and in the charts, Figures 1 through 3.**

The increase in GNP averaged about 5 percent annually for the 3 years 1959-61, decidedly less than the 7 percent average for the preceding 8 years. Agricultural performance, which weighs heavily in Soviet GNP, was a major factor in the slowdown. In 1961, agricultural output was about 5 percent above that in 1960 but only 3 percent above that in 1958. Some slowing down was to be expected after the spurt of growth associated with the "new lands" and "corn" programs that culminated in the bumper crop of 1958 (see Table 1 and Figure 1). Industry averaged about 7 percent annually in 1960 and 1961 compared with about 9 percent from 1955 to 1959 and a little more than 10 percent from 1950 to 1955.

The recent moderate declines in rates of growth appear to be largely explained by trends in labor and capital resources and in resource allocations. In industry the most obvious retarding factor in 1960 and 1961 was the progressive introduction of the 41-hour workweek during 1958-60, replacing the 47-hour week.

Trends in investment also were much less favorable to growth in recent years than in earlier years. New fixed investment grew at an average annual rate of more than 13 percent from 1950 to 1959 (see Table 1). At the same time, both defense expenditures and consumption grew much more slowly. From 1950 to 1959 the total investment grew from 18 percent to 30.5 percent as a share of GNP, whereas the share of defense expenditures declined from 13.7 percent to 9.3 percent (see Table 2 and Figure 2). Nearly all of the change in shares must have occurred since the Korean War. Since 1959 the growth of new fixed investment has been reduced, to 8 percent in 1960 and 4 percent in 1961. The trend in shares also appears to have been reversed in 1961 and in 1962, with defense expenditures rising as a share and investment declining.

In 1956 and 1957 especially, diversion of resources from military uses was crucial in maintaining growth of output and investment in the

* Tables 1, 2, 3, and 4 follow on pp. 9, 10, 11, and 12, respectively.
** Following p. 12.

NND 951154-525

face of the raw materials crisis of 1956, which was to lead to the abandonment of the Sixth Five Year Plan (1956-60). A sharp reduction in military forces and a slight reduction in output of military equipment made possible (1) the expansion of agricultural labor and capital that was required for the "new lands" program, (2) the continued rapid growth of industrial investment, and (3) a very large housing construction program. Two other sources of additional labor were significant in this period: (1) teenagers pushed into the labor force by the educational policies at that time and (2) the labor involved in the private housing construction program.

Since 1957 or 1958 the procurement of military hardware has been expanding at the expense of production of civilian machinery. Production of civilian machinery grew 18 percent and 16 percent in 1956 and 1957, respectively. Since 1957 the increase has averaged about 10 percent. The equipment portion of investment followed suit with a 1-year lag -- an average annual growth of 16 percent from 1955 to 1958 and an average of 9 percent from 1958 to 1961. From 1958 to 1962, production of military equipment grew at an average of more than 13 percent (see Table 3* and Figure 3**).

The industrial reorganization of 1957 seems to have produced at least one result unfavorable to growth. Since 1957, inventories have grown, from an already high level, at a rate exceeding that of total GNP.*** This inventory accumulation must certainly have aggravated an increasingly tight supply situation for the period 1958-61.

The composition of industrial growth is shown in Table 3. Aside from diverse tendencies in military and civilian machinery, the most notable trends are the following:

1. The accelerated substitution of oil and gas for coal since 1958;

2. The significant slowdown in production of metals, especially nonferrous metals, since 1955;

3. The rapid growth of the chemicals industry over the whole period;

4. The very rapid growth of construction materials (including lumber and steel), but with an ominous slowdown since 1959; and

* P. 11, below.
** Following p. 12.
*** See III, C, p. 27, below.

NND 951154-566

5. An absolute decline in forest products in 1960 and 1961, which almost certainly reflects the impact of the shortened workweek on this chronically labor-short industry.

A development which is not reflected in the aggregate statistics is the industrywide effort to modernize, mechanize, and diversify models and in general to apply new technology. This effort, which is a primary feature of the Seven Year Plan (1959-65), apparently is having only partial success. In the chemicals industry, in spite of difficulties in completing new plants, there has been a rapid increase in output primarily accounted for by new products such as synthetic fibers and plastics. In other industries such as agricultural machinery, however, considerable difficulty has been encountered in designing and getting into production a diversified line of new models. Output of agricultural machinery fell sharply in 1958 and has not yet recovered to the 1957 level.

In spite of Khrushchev's championing of the consumer, priorities for consumption have slipped badly in recent years. The relatively slow growth in production of consumer goods (see Table 3*) in 1960 and 1961 is directly related to the lack of growth in agriculture since 1958. Agriculture has not been allocated any substantial increase in investment since 1958. The total housing construction has been declining since 1959, state housing leveling off and private housing declining drastically. The rapid growth of "nonproductive investment" in 1956 to 1958 and its slowdown thereafter reflect chiefly trends in housing construction (see Table 1**).

In 1962 the Soviet leadership adopted a number of stop-gap measures to adjust to the difficulties that emerged in 1961. Among those are (1) the designation of priority construction projects to be completed at the expense of new starts and other projects in process and (2) an increase in multiple shifts worked in machinery plants to be implemented over the remaining years of the Seven Year Plan. Also, in agriculture an enormous program of converting grasslands and fallow to high-yield (but labor-and/or-machinery-intensive) feed crops such as corn, peas, beans, and sugar beets was launched last spring. This "plow up" program may produce an increase in output but will clearly require more labor and machinery than is currently available to agriculture. In 1962, however, in the face of adverse weather conditions, the program did no more than help maintain farm output at or slightly less than the level of 1961. In the longer run, more fertilizer will be required to replace the nutrients formerly conserved by rotation programs.

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* P. 11, below.
** P. 9, below.

NND 951154-567

The supply of labor is perhaps tighter now than in several years in the Soviet economy as a result of the shorter workweek, the halting of demobilization, the leveling off of participation rates, and the expanded cultivated crop acreage in agriculture. The supply of investment goods also is stretched tight by the competing demands of an expanding armaments program, the program to expand and modernize general industry, and the foreign aid program.

The Soviet leadership has some difficult allocation choices to make in the near future. The experience of the last few years strongly indicates that the economy can not maintain the rates of growth in all directions that Khrushchev appears to desire. The recent decisions to increase meat prices by 30 percent and to maintain the personal income tax are perhaps only the first of several difficult decisions which have to be made.

NND 951154-568

Table 1

USSR: Indicators of Economic Growth
1951-61

	Average Annual Rates of Growth (Percent)						
	1951-55 a/	1956	1957	1958	1959	1960	1961
Industrial output	10.3	8.4	8.7	8.6	10.4	6.9	7.6
Total investment (new fixed) b/	12.5	15.0	12.8	16.2	13.1	8.1	4.4
Productive investment	12.5	12.3	5.2	13.3	13.8	9.2	6.1
Industrial	12.6	14.4	5.2	13.0	15.2	10.7	4.2
Agricultural	18.4	5.8	4.4	12.8	7.0	2.4	11.0
Nonproductive investment	12.3	20.8	27.9	21.0	12.0	6.5	1.6
Agricultural output							
Moving average for 3 years	5.3	8.9	8.2	2.1	3.4	1.3	N.A.
Straight annual average	4.2	13.0	0	12.9	-6.0	4.1	5.2
Gross national product	6.6	8.0	5.3	11.0	3.6	6.1	4.9

a. The base year for the calculations in this column is 1950.
b. Calculations are based on unrounded data and may not agree with the rates of growth implied in Table 2 (p. 10, below), which is based on rounded volume indexes.

NND 951154-529

Table 2

USSR: Distribution of Gross National Product (Adjusted Factor Cost), by End Use
1950 and 1955-62

Values in Billion New Rubles a/

	1950		1955		1956		1957		1958		1959		1960		1961		1962 b
	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value	Percent of Total	Value
Consumption	53.0	64.2	74.7	63.0	78.7	61.1	83.7	62.6	87.9	59.6	93.9	58.8	97.7	58.3	101.4	58.7	N.A.
Investment c/	14.6	17.7	26.1	22.0	33.1	25.7	34.6	25.9	43.6	29.6	48.8	30.5	52.3	31.2	52.7	30.5	58.2
New fixed	N.A.	N.A.	20.6	17.4	23.7	18.4	26.8	20.1	31.1	21.1	35.0	21.9	37.9	22.6	39.6	22.9	N.A.
Other	N.A.	N.A.	5.5	4.6	9.4	7.3	7.8	5.8	12.4	8.4	13.8	8.6	14.4	8.6	13.2	7.6	N.A.
Defense d/	11.3	13.7	15.1	12.7	14.6	11.3	13.1	9.8	13.7	9.3	14.9	9.3	15.5	9.2	16.4	9.5	18.1
Administration	3.7	4.5	2.8	2.4	2.5	1.9	2.2	1.6	2.2	1.5	2.2	1.4	2.2	1.3	2.2	1.3	N.A.
Total c/	82.6	100.0	118.6	100.0	128.9	100.0	133.6	100.0	147.4	100.0	159.8	100.0	167.7	100.0	172.7	100.0	N.A.

a. The ruble values in this table were derived by use of 1955 value weights and volume indexes for each end-use component. The summation of these values over time does not give results identical with those obtained by aggregating sector of origin indexes. The GNP indexes in this report (for example, Table 1, p. 9, above) are those derived from sector of origin indexes (for example, for agriculture and industry).

b. Estimated from plan data and other sources.

c. Because of rounding, components may not add to the totals shown.

d. Because of the well-known difficulties in using Soviet prices and uncertainties in defense prices in particular, the defense share of GNP, shown here, is not a reliable indicator of the resource burden of defense in comparison with other countries. Some effort has been made to adjust the defense share to a factor cost basis so that the trends in shares are meaningful, but defense probably is still too low in level.

NND 951154-520

Table 3

USSR: Average Annual Rates of Growth in Industrial Production, by Branch of Industry
1951-61

Percent

	1951-55 a/	1956	1957	1958	1959	1960	1961
Industrial materials							
Electric power	13.1	12.7	9.6	12.2	12.3	10.5	11.9
Coal	8.4	9.8	8.0	7.3	2.6	1.8	-0.3
Petroleum and gas products	13.4	18.9	17.3	15.1	13.8	14.0	12.4
Ferrous metals	11.1	7.1	6.3	7.2	9.1	8.3	8.5
Nonferrous metals	14.1	6.7	5.1	4.9	7.0	8.3	8.5
Forest products	5.7	3.1	6.3	5.8	7.5	-4.5	-3.2
Paper and paperboard	10.0	7.8	8.7	6.7	4.5	4.4	6.5
Chemicals, including synthetic rubber	13.2	11.5	12.6	12.2	12.7	10.0	11.5
Construction materials b/	16.9	15.9	21.7	20.9	18.2	18.1	10.3
Aggregate raw materials	10.2	8.9	10.1	10.0	9.7	6.7	5.9
Machinery							
Civilian machinery	11.8	18.2	15.7	9.3	11.0	8.9	9.2
Military machinery c/	9.5	-1.5	-1.5	4.5	16.4	8.1	14.5
Aggregate machinery	10.6	8.4	7.8	7.3	13.2	8.6	11.4
Consumer goods							
Processed foods	9.7	10.7	7.1	6.7	8.4	1.7	7.
Soft goods	10.1	5.9	6.2	8.4	6.8	5.8	3.1
Aggregate consumer goods	10.0	7.7	6.6	7.8	7.4	4.2	4.9
Aggregate industrial production	10.3	8.4	8.7	8.6	10.4	6.9	7.6

a. The base year for the calculations in this column is 1950.
b. Excluding production of lumber and steel used in construction. Such production is included under the materials categories forest products and ferrous metals, respectively.
c. Further work is in progress on all these index numbers but especially on the military machinery numbers. For example, the estimated output of military machinery in 1950 probably is too high. Calculations are based on value data.

NND 951154-571

Table 4

USSR: Trends in Growth of the Labor Force
1950, 1953, and 1955-62

Million Persons at Midyear

	1950	1953	1955	1956	1957	1958	1959	1960	1961	1962
Total labor force	94.9	98.7	101.4	103.5	104.5	106.6	108.7	110.2	112.0	113.[illegible]
Armed forces	5.3	6.2	5.8	4.6	3.9	3.8	3.6	3.3	3.0	3.2
Civilian labor force	89.6	92.5	95.6	98.9	100.6	102.8	105.1	106.9	109.0	110.6
Agriculture	50.8	50.1	50.5	52.1	51.9	51.9	51.9	51.0	50.1	49.2
Nonagriculture	38.8	42.5	45.1	46.8	48.7	50.9	53.2	55.9	58.9	61.4
Industry	16.4	18.4	19.8	20.5	21.0	21.7	22.3	23.2	24.3	24.9
Other	22.4	24.1	25.3	26.3	27.7	29.2	30.9	32.7	34.6	36.5

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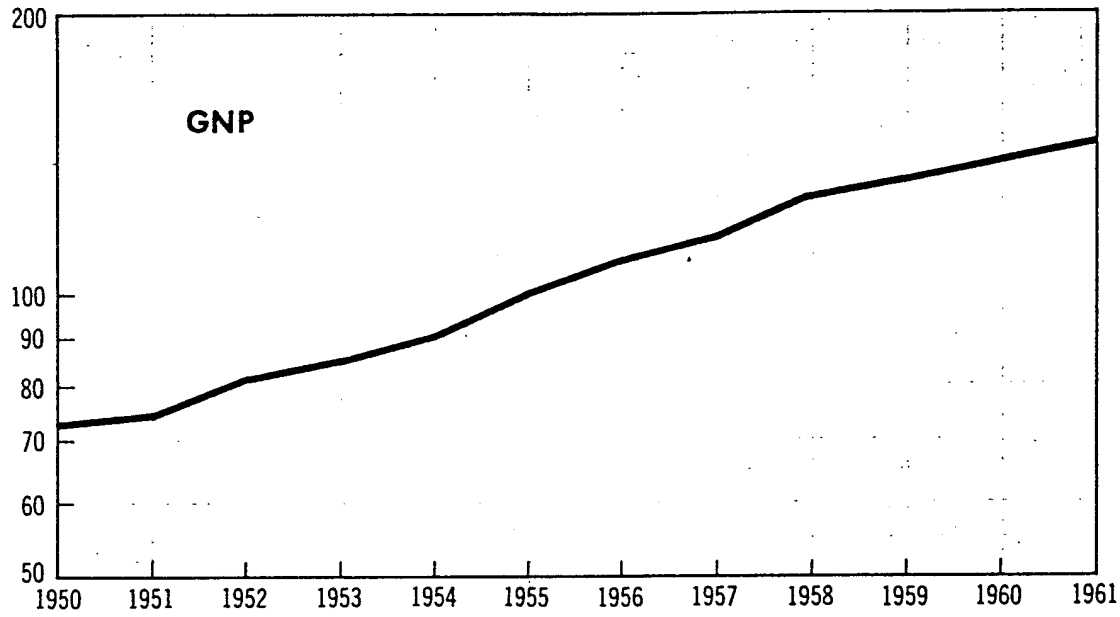
Figure 1

USSR: GROWTH OF GROSS NATIONAL PRODUCT, INDUSTRY AND AGRICULTURE, 1950-61

(Volume Indexes 1955 = 100)



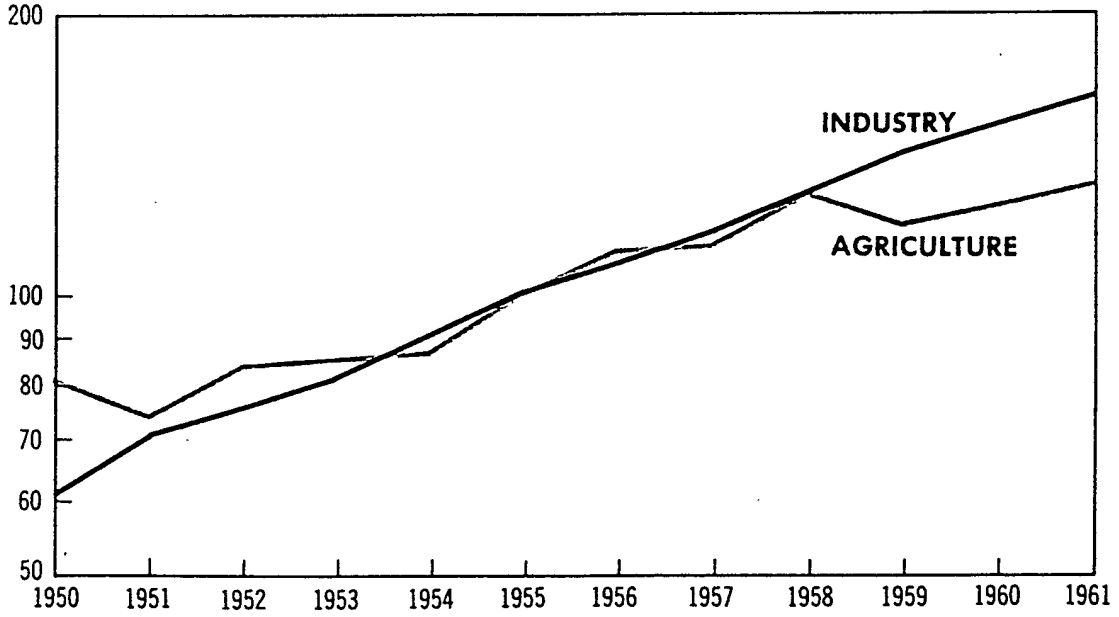


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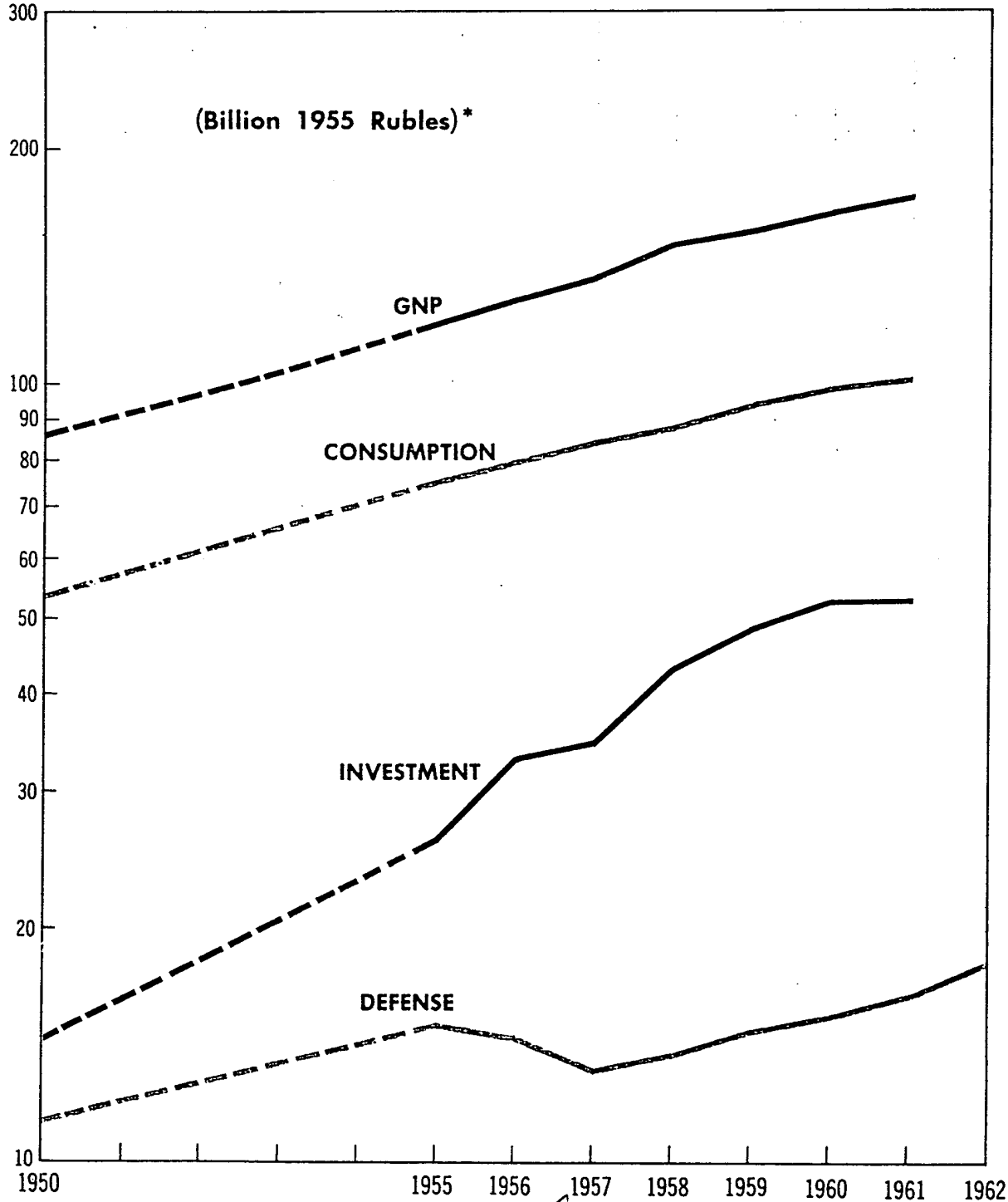
Figure 2

USSR: GROWTH OF CONSUMPTION, INVESTMENT, AND DEFENSE 1950 AND 1955-62



*Expressed in terms of new rubles

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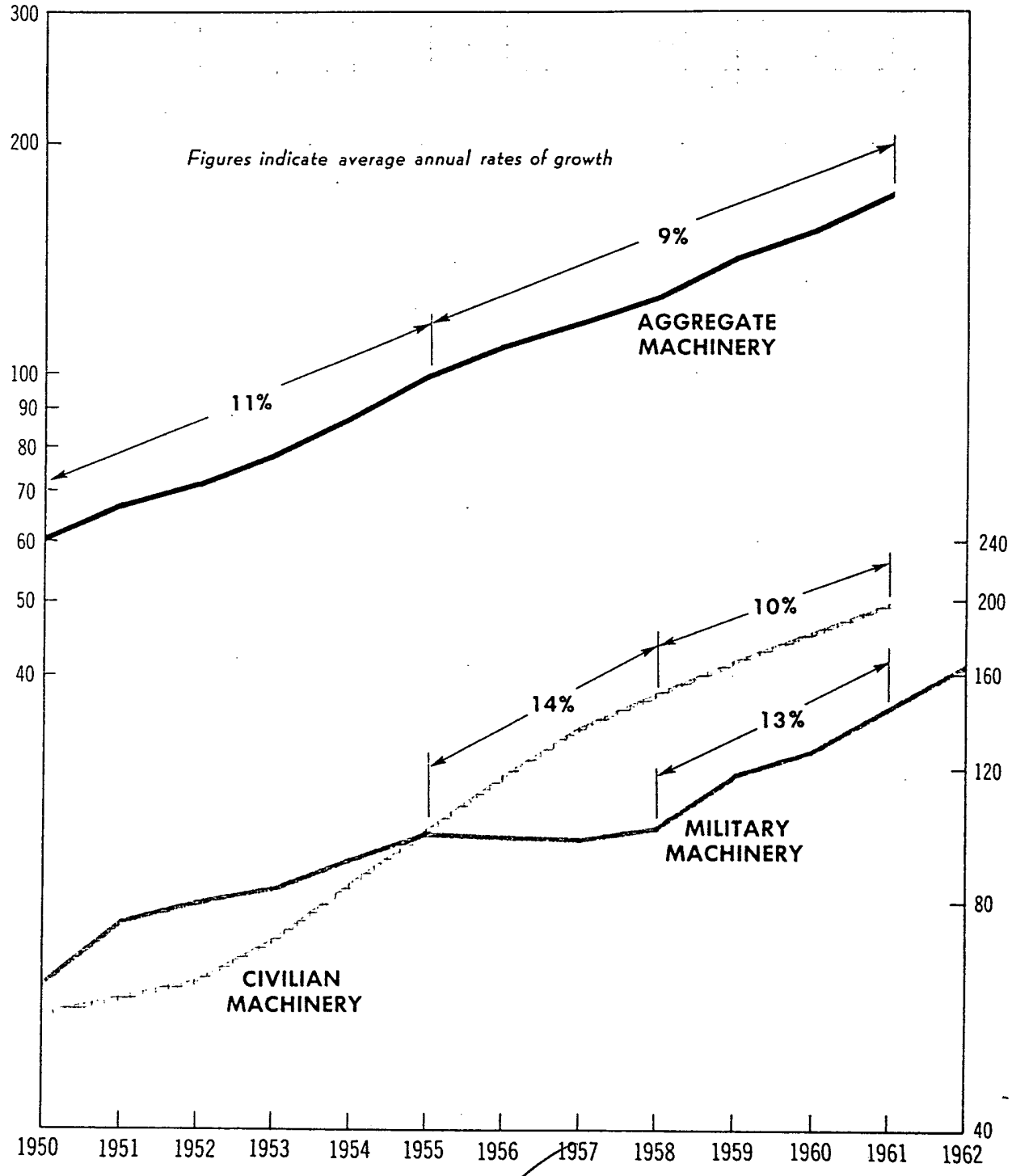
Figure 3

USSR: GROWTH OF MACHINERY OUTPUT, 1950-62

(Volume Indexes 1955 = 100)



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II. Economic Policy and the Leadership

A. Summary of the Period Before 1959

Many of the difficulties that the Soviet economy is experiencing in 1962 are a direct result of policies identified with Khrushchev. His style of leadership was in evidence even during the period of collective leadership and, of course, since 1957 has dominated the scene. This style can be characterized as one of chronic optimism -- confidence that the Soviet economy can move steadily and rapidly ahead, meeting the competing demands for increased defense, growth, and consumption. When developments make it clear that production will not meet all the important demands, Khrushchev tends to turn to new forms of organization schemes. This faith in organizational changes stems from his rather naive belief that he can provide the right administrative setting to release large internal reserves.

The fine old Bolshevik tradition of carrying out policy by sweeping campaigns has never had a more enthusiastic practitioner than Khrushchev, whether he is expanding sown acreage or introducing new technology in industry. When organizational changes and programs to raise output fail to sustain a rate of growth high enough to meet enlarged commitments, however, Khrushchev tends to hesitate in reducing commitments. His methods of solving economic problems have sometimes led to the growth of new problems.

Cumulative evidence suggests that neither of the two major organizational changes -- in industry in 1957, in agriculture in 1958 -- has been successful (see III, C,* and III, D**). Agricultural administration above the enterprise level underwent additional major changes in 1961 and 1962. Although there have not been radical modifications in industrial organization since 1957, the tendency has been to add "new layers" of production and supply organizations to overcome the more obvious problems. The recent changes in organization announced at the November Plenum of the Central Committee of the Communist Party continue the series of administrative reorganizations begun in 1957, all with the common purpose of obtaining a more efficient result without a fundamental overhaul of the system.

Two further developments that illustrate Khrushchev's overoptimism about obtaining gains in efficiency from the economy are (1) the program for introducing new technology in the Seven Year Plan and the

* P. 27, below.
** P. 31, below.

NND 951154-579

projected productivity plans based thereon and (2) the decision in 1957 to proceed with the substantial reduction in the workweek in the nonagricultural sectors.

Khrushchev has had more success in his innovations that have affected agricultural output. The "new lands" and "corn" programs probably accounted for more than one-fourth of the increase in farm output between 1953 and 1960. Khrushchev's luck in the "new lands" program may be fading a bit each year, however, and may have given rise to the 1962 innovation, the "plow up" campaign (see III, D*).

The striking success in increasing farm output in the socialized sector between 1953 and 1958 must have led Khrushchev to base future commitments on the assumption that the rate of output would continue to grow rapidly. Thus he simultaneously insisted on large increases in output of meat and milk, made promises to consumers to raise money incomes to pay for the meat and milk, and initiated a campaign to restrict private agriculture -- the major producer in 1958 of meat and milk. These latter two policies resulted in inflationary pressures, falling output in the private sector, and retail price increases for animal products.

In summary, the economic policy decisions before 1959 most closely associated with Khrushchev have not turned out to be very successful.

B. Current Issues and Policy Discussions, 1959-62

Policy discussions and decisions in the Soviet context have an "iceberg" character. For motives that probably differ with every case, the Soviet leaders see fit from time to time to partly disclose to the public, both domestic and foreign, their policy discussions of pending decisions. An analysis of Soviet intentions in the broad area of resource allocation based on the partial disclosure of policy discussions and disagreements is complicated by the highly general nature of the announcements. For example, on the issue of resource allocation to consumer welfare which is discussed below, it is seldom clear from the public statements of the leadership what magnitude of change in resource commitment is under discussion and what the range of alternative choices is.

Between mid-1959 and mid-1961, as in the preceding period, Khrushchev appeared to be concerned about the need to increase consumer welfare. This concern was illustrated in the first half of 1961 by his suggestion that the consumer-oriented policy be enshrined

* P. 31, below.

NND 951154-580

in a "new law of socialism" -- in plain words, that the rate of growth of light industry be raised to that of heavy industry.

It remains unclear, after all of the verbal pyrotechnics from Khrushchev on shifting additional resources to consumer-related activities, whether or not an appreciable change in short-run priorities and/or allocations ever did take place. The best indication of an actual shift came in the fall of 1959 with the announcement of a special 3-year program for consumer durables. Apparently related to this decision was Khrushchev's admission to Ambassador Thompson at the same time that only with great difficulty had he persuaded his colleagues to agree to the allocation of 1 million metric tons* more steel to the civilian sector. He contended that this had been of "enormous value and had only a minor effect on military and other needs."

At the time of the announcement of a troop cut in January 1960, Khrushchev was quick to point out that the savings in the military budget, estimated at 1.6 billion to 1.7 billion rubles annually, would "create additional possibilities for raising the standard of living ... ." The only hard commitment of additional funds to this end was a supplemental allocation of 364 million rubles to the civilian sector in January 1960, directly tied to the reduction in the armed forces. There was a further claim by Khrushchev in May 1960 that 100 million more rubles had been expended on the sugar, meat, and textile industries. Khrushchev made it clear in the same speech, however, that he had larger allocations in mind when he said that supplemental allocations of 2.5 billion to 3.0 billion rubles (equivalent to about 7 percent of new fixed investment in 1960) above the original Seven Year Plan were being earmarked for the development of the textile and footwear industries and the expansion of agriculture.

Khrushchev's public speeches throughout 1960 and early 1961 reflected confidence that more resources could safely be channeled into consumption without any retardation of economic growth or weakening of military power. For example, in his May 1960 announcement of a limited reallocation of resources to civilian needs, he made explicit the links between increased output of consumer goods and reduced defense expenditures. Eight months later, at the January 1961 Plenum of the Central Committee, he unveiled a new "law of socialism" that "production of consumer goods should always exceed public demand," in order to legitimatize a more ambitious welfare program. Accordingly, Khrushchev felt called on to provide a theoretic rationale for his position, embraced in Marxist jargon, and to declare Stalin's "law of socialism" to be "erroneous" (according to Stalin, production of goods under socialism always lagged behind the growth of demand).

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* Tonnages are given in metric tons throughout this report.

NND 951154-581

- At the same Plenum (January 1961), Khrushchev argued against the "policy of developing ferrous metallurgy to the absolute limit." He berated "some comrades who had developed an appetite to give the country more metal" and warned that such a desire might be detrimental to consumer interest. If they (the Soviet leaders) permitted disproportions to develop in the economy, it would result in "betraying the confidence of the people." He warned:

> We must do everything possible to see that our economy constantly satisfies the rapidly growing needs of the population. Otherwise, there may be a discrepancy between the purchasing power of consumers and the possibilities for satisfying their demand -- a situation fraught with dangerous consequences.

That these words in January 1961 were to be prophetic was suggested a year and a half later when it was found necessary to offset excess purchasing power with a significant rise in food prices.

Also at the same January Plenum, Khrushchev contended that the 2.5 billion to 3.0 billion rubles authorized by the May 1960 Supreme Soviet as supplemental allocations to agriculture and light industry were "inadequate," insisting that "in spite of the threats of the imperialists" the USSR was in a position to divert more resources without prejudicing the interest of heavy industry and defense. He gave a clue to the magnitudes that he had in mind when on 20 May 1961 he made the following statement in the presence of Western correspondents: "Now we consider our heavy industry as built, so we are not going to give it priority. Light industry and heavy industry will develop at the same rate." This old "Malenkov heresy of equal rates" was not repeated in the domestic media, but a month later Khrushchev delivered a speech in which he said that "side by side with heavy industry, light and food industry ... will be developed rapidly."

However, June 1961 appears to have marked a turning point in Khrushchev's thinking. Voluntarily or involuntarily, he began to soft-pedal the welfare line, and the best that he could do at the 22d Party Congress in October 1961 was to reiterate the decision to make a supplemental application of "about 2.5 billion rubles" to light industry and agriculture. The general tone of the speeches and the final Party Program at the Party Congress was one of conservative emphasis on the traditional lines of economic development. The consumer welfare aspect was mostly relegated to grandiose promises

NND 951154-582

for 1970 and 1980. The slogans for catching up with the US in meat and milk consumption in the near term and Khrushchev's "new law of socialism" were either ignored or dampened.

As the strategic problems in 1961 became more evident, Khrushchev was persuaded that diversions to consumption would have to be postponed. Very likely there was strenuous argument within the top leadership about the allocations of resources in this difficult period. It is suggested that Khrushchev was persuaded not only by the arguments of his colleagues but also by what he is fond of calling "life itself."

Since the Party Congress, nearly a year ago, the evidence of controversy over allocational issues has been weak and somewhat ambiguous with apparently short-run agreement to "hold the line" and indecision over choices to be made in the more intermediate term. Certainly, the recent decisions in agriculture must be considered as temporary expedients. Khrushchev at the opening of the March 1962 Plenum showed signs of his old enthusiasm for "diversion of resources" to agriculture but backtracked somewhat in his closing remarks. At the opening session he said:

> The attention ... to questions of increasing material and technical assistance to the collective and state farms has slackened in the past two or three years. Furthermore, some officials display unconcern and irresponsibility in solving the urgent problems of increasing the output of equipment, mineral fertilizers, herbicides, etc., ... Some leaders think that all questions of the mechanization of agriculture have been solved and that now it is even possible to take something away from the farm machine industry for other branches of the economy. These are very dangerous sentiments, and they must be condemned ... . I think we began shifting farm machinery plants prematurely to the production of other items, sometimes far from the essential ones.

He went on in this vein stressing immediate needs but carefully not mentioning sums of rubles to be allocated. At the closing session his tone changes:

> Measures for increasing aid to agriculture do not signify that resources will now be diverted to agriculture at the expense of development of industry

NND 951154-583

> and the strengthening of the country's defenses. The strengthening of the might of the Soviet Union, of its defenses, is our most important task, and we will perform it unswervingly. This is the foundation of the existence of our socialist state, of its development and successes. This does not mean that I am in any sense retreating from the position taken in the report concerning the allocation of additional material and technical resources for agriculture. No, the question of strengthening assistance to agriculture must be solved, and it will be solved. But, comrades, I repeat that we must first of all make intelligent use of the machinery already available to agriculture.

The tone of indecision on resource allocation in March 1962 was carried over to an interview in April when Khrushchev told Cowles that no decision had been made on the timing of the manned flight to the moon. Kozlov also recently has complained to another foreigner about the high cost of such a project.

Although Khrushchev had practically promised no retail price increases for food in March, the announcement in June of sizable price increases suggests that the problem of inflationary pressures was being faced in more straightforward fashion. The reports of civil disturbances associated with these price increases and the appeals from provincial officials for additional aid in coping with the "plow up" program intensify the multiple pressures felt by the leadership and make decisions with reference to competing priorities that much more difficult.

In short, Khrushchev has rather consistently been on the side of the consumer, at least as much as one could expect in a society dedicated to the growth of heavy industry and military strength. Beginning in 1959, however, he has not had his own way very much, although the discussion and controversy over policy probably has not led to strong factionalism or deep division of opinion within the top leadership. Nevertheless, if it is correct to believe that Khrushchev's past performance suggests a strong desire to raise consumption, the recent erosion in the consumption campaigns by a rapidly expanding military program is surely not to his liking.

NND 951154-584

III. Economic Problems

A. Problems in Investment

The most serious symptom of slackening rates of growth in the Soviet economy comes from the side of investment. Large expenditures on new fixed investment have fueled the rapid growth rates of the past, and future levels of output are largely a reflection of present expenditures on new plant and equipment.

The data in Table 5* suggest an easing off of investment flows to industry and agriculture during 1959-61. The rate of increase in industrial investment in 1961 was the lowest in the postwar period. The actual commissioning of new capacity in industry probably increased at an even lower rate than productive investment, the volume of unfinished construction growing more rapidly. In order to maintain an average rate of increase in industrial capital stock of 11 percent during the 1950's, gross investments in new plant and equipment increased at an annual rate of 12 percent. The announced plans for investment in 1962 do not suggest any significant increase in investment growth over 1961.

The structure of industrial investment over the past decade has varied because of changes in the economy's demands and, to a smaller extent, because of changes in cost of introducing new capacity. In the first half of the decade the rate of increase for the several branches was nearly the same as the over-all rate for industry, with ferrous metallurgy lagging behind.

The shortfalls in output in the basic sectors in 1956-57 brought a quick response from the regime. For the years 1956-58 an increased emphasis was given to basic metals, coal, electric power, and construction materials. After the flow of new capacity in materials and energy regained balance with other branches, there was another shift in the pattern -- new emphasis on machine building and a very rapid increase in chemicals.

The general slowdown in industrial investment since 1959 has affected rates of increase in all the branches. Investment in machine building has declined only moderately in annual increment, probably reflecting the increased supporting role that this sector is giving to defense and space programs. The most ominous indication of continuing investment problems is the low increase of investment in the construction

* Table 5 follows on p. 20.

NND 951154-585

Table 5

USSR: Average Annual Rates of Growth of New Fixed Productive Investment, by Sector
1951-61 and 1962 Plan

Percent

	1951-55 a/	1956	1957	1958	1959	1960	1961	1962 Plan b/
Investment, all sectors	12.5	12.3	5.2	13.3	13.8	9.2	6.1	
Industry, total	12.6	14.4	5.2	13.0	15.2	10.7	4.2	
Ferrous metallurgy	4.7	0	9.4	35.9	25.0	11.9	8.9	10.6
Chemicals	10.4	8.0	-1.3	39.5	53.0	34.8	15.4	22.0
Fuels and power	12.0	8.3	10.1	9.0	4.1	4.6	4.4	6.7 c/
Machine building	12.2	9.0	1.4	2.1	18.6	18.3	13.4	13.9
Construction materials and construction	14.8	39.0	9.6	15.3	20.3	15.2	4.4	5.0
Consumer industries	11.7	25.1	6.6	22.2	16.1	17.2	-9.8	33.5 d/
Agriculture	18.4	5.8	4.4	12.8	7.0	2.4	11.0	
Transport and communications	3.0	17.2	6.7	15.8	21.6	14.5	5.3	

a. The base year for the calculations in this column is 1950.
b. These rates are for state plan investments only. The other data in the table are for the total investment. The rates of increase in state investment, by branch of industry, during the first half of 1962 (over the first half of 1961) were generally lower than the plan rates for the year. Rates for the first half of 1962 were as follows: ferrous metallurgy, 5 percent; chemicals, 14 percent; fuels and power, 6.5 percent; machine building, 8 percent; and consumer industries, 10 percent.
c. Assuming that investment in the coal industry was not planned to increase in 1962.
d. Light industry only, excluding the food industry.

NND 951154- 586

materials and construction industries in 1961. The 6-months' report in 1962 indicated an actual decline in investment in these industries.

The cyclical changes in agricultural investment during the 1950's closely followed Khrushchev's innovations in land use. Peaks in investment in 1954-55 and in 1958 reflected the machinery support required to undertake the "new lands" and "corn" programs. The decline in machinery allocations to agriculture between 1958 and 1960 dampened the over-all rate of increase in output for the sector.

The rather sharp upturn in agricultural investment in 1961 (an 11-percent increase) would suggest, at first glance, that a policy decision had been made to give higher priority to agriculture in the allocation of investment resources. Because of heavy retirements of agricultural machinery in 1961, however, the net increase in machinery stocks was actually below the average for 1955-60 -- 5 percent compared with an annual average of 7 percent for the previous 5 years. Although there was much talk about increased investments in agriculture at both the March and November Plenums in 1962, the lack of firm commitments, the ambiguity in Khrushchev's statements, and the indecision about investments in industries supporting agriculture suggest that only marginal increases in resource allocations have so far been made and that indecision about major commitments remains.

Construction of new housing, both state and private, was expanded rapidly in 1957-59. The drive against private activity beginning in 1960 combined with the lower priority given housing in competition for state resources has resulted in a small decline in investment in new housing construction over the past 2 years.

The failure of industrial investment to maintain steady increases over the past 2 years is less understandable than the lag for other sectors. A fundamental tenet of Soviet economic policy is to favor growth. Under Stalin the leaders quickly compromised goals in the consumer sector -- housing, agriculture, and light industry -- in order to increase industrial investment. When high rates of growth were endangered in 1956-57, however, the leadership reacted by trimming allocations in the defense sector. As of the beginning of 1963, the leadership has yet to come out clearly in favor of growth at the expense of the other sectors.

There are certain common elements underlying the problems faced by investment programs in all sectors of the Soviet economy. The volume of press commentary on the lack of coordination between the producers of construction materials and producers' equipment and the investment planners and builders suggests that this problem was worse than usual. The deteriorating supply situation depressed the over-all increases in volume of investment. More than that, the continued dispersion of resources among too many projects together with the slowdown in increase

NND 951154-587

of output of materials could only exacerbate the problem of project completion. The end results were serious delays in completions, a disproportionate increase in the aggregate volume of unfinished construction, and a 33-percent increase in the volume of uninstalled equipment in 1961, all of which led to the extensive reappraisal of investment priorities for 1962.

Changes in the growth of output of building materials have generally been in step with the changes in levels of construction activity. Rates of growth of both have slowed significantly since 1959 (see Table 6). There are not, therefore, large inventories of materials available for a rapid reacceleration of construction activity.

Table 6

USSR: Output of Construction Materials and Changes in Construction Activity 1951-61

	Average Annual Rates of Growth (Percent)						
	1951-55 a/	1956	1957	1958	1959	1960	1961
Output of construction materials b/	12.2	7.5	14.1	15.9	14.6	9.6	6.1
New construction	12.8	12.3	14.3	17.3	15.3	8.5	1.4

a. The base year for the calculations in this column is 1950.
b. Including all materials used in construction. The index of output of construction materials shown in Tables 3 (p. 11, above) and 12 (p. 56, below) exclude the output of lumber and steel used in construction.

The distribution of rates of growth in investment by economic sector (see Table 5*) does not adequately reflect the growing emphasis on quality of equipment and materials as opposed to sheer quantity. Agricultural machinery, traditionally of low quality, recently has been the subject of further press notices, suggesting that present quality problems are worse than before and that consumers with higher priority are siphoning off increasing shares of the best quality metals and semifabricates. The emphasis on subcontracting for component parts to be delivered to final assembly plants facilitates this favoritism

* P. 20, above.

NND 951154-588

shown to consumers of high-priority equipment. Thus, in the first half of 1961, about 5,000 tractors were rejected by inspectors at the major tractor plants because of defects in quality. The reject rate in one plant had increased 20 percent over the previous year. The tractor producers specifically complain about the low-quality fuel systems and electrical components that they receive from outside suppliers. After the machinery passes inspection at the producing plant, there is another check at the wholesale level. At this next level, 10 percent of all products actually shipped by the tractor plants in 1961 and more than 12 percent of the products of agricultural machine building plants were rejected.

The increase in deterioration of quality also is evident in some consumer durables. Approximately two-thirds of all television receivers are currently being sent in for repair during the first 6 months after retail sale, and replacement parts are in short supply. These are new model television sets just introduced in 1961.

A general indication of the problem of maintaining quality is the announced increase in losses from defective production in industry -- up 11 percent in 1961 compared with 1960.

Under the strains of the deceleration over the past 3 years the nonproductive elements in investment -- for example, housing, municipal services, and schools -- were reduced more rapidly than the productive elements (see Table 7*). The interesting exception, the continual increase of investment in nonproductive equipment, suggests that rapid increases in urban population have forced the government to expand investments in equipment for municipal services -- waterworks, sewage disposal, and the like -- regardless of pressing priorities from other sectors.

The response by the regime to the slowdown in formation of new fixed capital has been as one would have predicted. Measures taken include reduction in new starts, concentration of resources on priority projects, and an even greater concentration of resources on the expansion and modernization of present plant facilities than was originally intended. The reduction of the number of new starts on "green field sites" reduces initial overhead expenses (such as rail and other service facilities) per unit of new capacity. The failure to carry through the planned magnitude of investments in the eastern regions (Siberia and Central Asia) suggests a compromise with short-run production needs at the expense of longer run productivity gains by expanding existing plants in the developed western regions.

* Table 7 follows on p. 24.

NND 951154-589

Table 7

USSR: Average Annual Rates of Growth in New Fixed Investment, by Function
1951-61

Percent

	1951-55 a/	1956	1957	1958	1959	1960	1961
Total investment b/	12.5	15.0	12.8	16.2	13.1	8.1	4.4
Construction	12.8	12.3	14.3	17.3	15.3	8.5	1.4
Equipment	10.9	23.0	9.9	16.0	8.6	6.7	11.4
Productive investment	12.5	12.3	5.2	13.3	13.8	9.2	6.1
Construction	12.1	5.1	1.7	16.0	17.3	12.3	3.0
Equipment	12.6	28.3	9.3	12.9	7.6	4.5	11.3
Nonproductive investment	12.3	20.8	27.9	21.0	12.0	6.5	1.6
By component							
Construction	13.0	22.2	29.1	18.4	13.4	5.4	-0.3
Equipment	2.8	-10.0	15.7	43.7	15.3	21.4	12.3
By use							
Housing	13.4	17.6	39.1	21.3	10.4	-0.5	-4.8
Other	10.8	25.1	12.2	20.0	14.9	18.4	10.6

a. The base year for the calculations in this column is 1950.
b. Calculations are based on unrounded data and may not agree with the rates of growth implied in Table 2 (p. 10, above), which is based on rounded volume indexes.

NND 951154-576

An important consequence of delays in commissioning new capacity is a slowdown in retirements of old plant and equipment. The Seven Year Plan goals implied an average retirement rate of the industrial capital stock (at the end of 1958) of more than 8 percent per year. This capacity would be the most obsolete and high-cost plant and equipment, and by replacing it with new stock, important cost reductions in output were to be obtained. The data for the first 2 years of the plan suggest a retirement rate only one-half as great as the average anticipated rate. Failure to retire capacity in coal, ferrous metallurgy, and electric power will give temporary, if high-cost, relief, assuming that new capacity continues to be inadequate. How far this device can be used to make up for investment shortfalls is uncertain.

Another characteristic response of the regime to present investment problems is to recentralize much of the planning and supply of the minor share of investment projects formerly left to republic or local bodies. The control organs have been alerted, and the provincial Party secretary who has had ideas about diverting materials and equipment to a local theater project will now be under closer scrutiny.

All of the above policies for dealing with pressing problems in investment and new capacity have been used at one time or another in the past. In essence they are stop-gap measures, most of which tend to sacrifice longer run productivity gains for short-term production needs.

B. Problems in Industry

The lower rates of growth experienced in Soviet industry since the mid-1950's seem to have had their origin in the following two important developments: (1) increases in inputs of man-hours came to a halt as the result of the reduction in the length of the workweek, and (2) gains in the increase in output per unit of input slowed down perceptibly.

The total number of people employed in industry increased at a fairly constant rate during 1951-61, but the total number of man-hours supplied in 1961 was practically the same as in 1958. The transition from the 47-hour to the 41-hour scheduled workweek was remarkably smooth, and there were clear indications in 1958-59 of gains in output per man-hour, enterprise managers being under pressure to maintain output after the reduction in the workweek. Such gains, however, were limited and nonrecurring. Furthermore, they were characterized by savings of resources in producing output from capacity already in operation rather than from obtaining further increments in output from the same resources or from new capacity. The evidence to date strongly suggests that the program for reduction of hours had a dampening effect on industrial growth in 1960-61.

NND 951154-59

A very important element in the growth of modern industrial societies is related to gains obtainable from factors other than increases in labor force and hours of work or from additions to the stock of capital (machinery, equipment, buildings, and the like). These "nonconventional" factors have rather intangible characteristics and include such divergent items as new technology, improved management, a higher level of training, and material incentives. The role of the nonlabor and noncapital elements has been important to Soviet industrial growth in the past and is being counted on by the regime in the future.

The contribution of these factors to over-all industrial growth can be approximated by relating the changes in actual output to the changes in inputs of labor and capital. The difference between the change in conventional resources and output gives a measure of productivity gain expressed as the increase in output per unit of input.

The data in Table 8 give the trends in resource use and productivity in industry since 1950. The data are far from precise, and the results are presented only as an indication of general trends. Indexes of resource productivity in industry are given in Table 11.*

Table 8

USSR: Industrial Growth and Changes in Resource Use and Productivity 1951-61

	Average Annual Rates of Growth (Percent) a/			
	1951-55	1956-57	1958-59	1960-61
Labor				
Employment	4.8	5.1	3.2	4.7
Man-hours	4.8	3.1	1.1	-0.4
Capital services	11.3	11.1	11.5	12.4
Industrial output	10.3	8.5	9.5	7.2
Increases in output not accounted for by increases in inputs	3.7	2.3	4.4	2.6

a. The base year for the calculations in each column is the year before the stated year.

* P. 55, below.

NND 951154-592

The experience of the 1950's reflects unevenness in industrial growth attributable to increases in resource productivity -- major increases in the 1951-55 era, especially in the years after Stalin's death, were replaced by relatively small gains in the period 1956-57. The improvement in 1958-59 in resource productivity may have been entirely related to gains in efficiency from the reduction in the workweek and thus of a one-time character.

The major element, however, in explaining longer run differences between increases in inputs of labor and capital and increases in output is new technology. The data available for planned resource use in industry in the Seven Year Plan, for example, suggest that the regime hoped to obtain almost half of the increase in industrial growth between 1958 and 1965 from productivity gains.

The principal part of this planned gain in output per unit of input would be related to raising the proportion of new plant and equipment that incorporates new technology. Most of the new techniques to be employed are not fresh from the laboratory but reflect an adaptation of known and proved technology already in industrial use in domestic or foreign plants. The emphasis on new technology has been highlighted by the official campaign tactics employed over the past 3 years. Special decrees, income incentives, and a new bureaucracy to expedite the technology plans are just a few of the indications of the intensity of the drive to raise the productivity of aggregate resources by a broad assimilation of advanced technology.

For several reasons this assimilation has not gone as rapidly as planned. It is believed that a major factor in the mediocre performance recently has been the competition from defense and space programs for the required high-quality resources. The introduction of modern industrial technology in new plant and equipment calls for the highest quality inputs, both men and equipment. Research and development of military application particularly demands advanced and precision equipment, special materials, and the highest caliber of designers, engineers, technicians, and project leaders. The heavy use of these highest quality resources may have caused a lag in the adoption of technology in civilian sectors of the economy.

C. Organizational Problems of Industry and Investment

The industrial reorganization of 1957, under which regional sovnarkhozes replaced the former industrial ministries, exhibited the main characteristics of Khrushchev's approach to economic management. Under the label of "democratic centralism," Khrushchev proposed a more flexible implementation at local levels of objectives set at the center. The assumptions underlying this approach seem to be the following:

NND 951154-593

1. A reliance on inspirational, highly motivated leadership at all levels as opposed to fixed administrative rules and hence a preference for Party men and organization over government officials and bureaucracy;

2. An implicit belief that efficient means leading to good results at local levels are self-evident to any honest man of common sense, as they always were to Khrushchev whenever he looked closely into any particular situation; and

3. A conviction that it is feasible to eliminate by "democratic centralism" the multitude of wastes and inefficiencies in the Soviet economy which are quite obvious to Soviet as well as Western observers.

The subsequent history of the sovnarkhoz organization proved Khrushchev's ideas to be administratively naive. Localism and other symptoms of deviation from the general objectives of the central leadership have led to a series of patchwork decrees which have steadily reduced freedom of action of local authorities. Recent official discussion, however, indicates that organizational stress continues and may even be worsening.

At the November Plenum of the Central Committee, Khrushchev proposed what appears to be another comprehensive reorganization not only of the government economic apparatus but also of the Party. Although the many important details of the recent organizational changes have not been announced -- or possibly even decided -- it does not appear that the reorganization effectively deals with the deficiencies which have plagued the economy recently and have been vigorously denounced in the Soviet press.

The primary deficiency of present organization is duplication of authority and responsibility. The enterprise manager operating under the present system finds that he has several bosses who can levy production plans on him and, worse yet, several organizations which are responsible for supplying materials and components. The manager's superiors who pass down production quotas may or may not have control over the other enterprises and supply agencies that must meet delivery schedules to assure fulfillment of production plans. A system for effective coordination of plans made by various authorities and of supply with these plans has not yet been found.

NND 951154-594

Under the old ministerial system, whatever its other faults, each enterprise had one boss for determining plans and providing supplies. Under the present system, bosses are located geographically and vertically at various levels. From the side of production planning, for example, part of the enterprise's production may be planned at the economic region level, part at the republic level, and part by the All-Union planning agency (Gosplan) in Moscow. In one case the manager of a machine building plant complained that seven different agencies from the oblast to Moscow leveled production plans on his plant and that the nominal superior, the sovnarkhoz, seemed to be unable to stop the pressures. From the allocational side of supplies, there are functional departments within All-Union Gosplan which have control over particular materials and machinery, and other materials are allocated by republic organs and some minor materials by the sovnarkhoz.

The most concrete evidence that the 1957 reorganization is not going as planned is the rapid increase in inventories since 1958. After a temporary letup in the rate of inventory accumulation in 1957, when Khrushchev was literally peeking in warehouses to press his campaign against hoarding of materials and machinery, the rate of additions to inventories increased rapidly. In 1961, total inventories in the economy amounted to 55 percent of GNP for that year compared with 43 percent in 1957. In the US in 1956, inventories were less than one-fourth of GNP.

This rapid increase in stores of fuels, materials, semifabricates, spare parts, and machinery suggest a combination of two supply problems: first, a persistent penchant of industrial managers to hoard materials and parts because of uncertain supply arrangements and, second, a lack of effective coordination in obtaining the precise assortment of output needed. This latter element leads to a surplus of some items and shortages of others. For example, the stocks of rolled metal held by users came to 4 million tons in 1961, whereas the inventory norms called for only 3 million tons. As the commodities become less homogeneous in nature the coordination and supply problems multiply. The emphasis on problems of control and inspection at the recent Plenum suggests that additional efforts will be made to reduce hoarding and enforce contractual obligations of producers to supply the proper assortment to users.

The present system of organization and management affecting production plans and supply also is related to the current unsatisfactory performance in investment. One of the primary reasons why the volume of unfinished construction and uninstalled investment equipment has been increasing more rapidly than the total investment over the past year is the failure to link investment plans satisfactorily with material and machinery supply plans. The failure of planning

NND 951154-595

organs, sovnarkhozes, and construction trusts to coordinate correctly leads to more building projects being in hand at any given moment than can be supplied with metal, cement, and equipment. Thus the oft-heard complaint that investment funds remain unexpended because the necessary materials and equipment do not arrive or that ruble allocations are inadequate to spend on physical resources available at another building site. The temporary solution on the part of the central planners is to set up a list of priority projects, a device frequently used in the past. Although this procedure produces a temporary increase in completions, it usually raises investment costs on the priority project and means that less important projects remain unfinished and others, perhaps, unstarted.

As a result of the above trends in production and investment supply, planning, and operational control, there has been a tendency to recentralize in piecemeal fashion many of the allocation and investment decisions which could be taken at the local level. From the side of investment, there was a drastic reduction in 1961 in decentralized investments, and in 1962 the limit on investment projects that require review and approval by the Council of Ministers, USSR, was lowered to 2.5 million rubles. Even this low level may have been eliminated at the recent November Plenum, which took measures further to tighten central control over all construction. Gosstroy, the central construction office, is to set up priority lists on all projects, set standards for building designs, and coordinate production and supply of building materials.

In general, the other proposals by Khrushchev at the November Plenum were a continuation of the piecemeal changes since 1957 and in the same direction -- further emphasis on central direction of the economy with the gradual erosion of the limited area of freedom of action conceded to the local authorities in 1957. Probably the most important change was the creation of vertical Party organizations from Moscow to the enterprises (with separate structures for agriculture and industry) to make the Party directly responsible for the operating efficiency of the economy. This step is a break with the long tradition that held that the main function of the Party official is in the realm of propaganda and ideology, not in the direct control and operational responsibility of the economy. This emphasis on the formal responsibility of Party men on the carrying out of the leadership's directives is consistent with the character of Khrushchev's approach to economic management that is suggested above. This approach, however, does not point to a correction of the problems of duplication of authority and lack of coordination of supply and production plans about which enterprise managers have complained so bitterly in the press for the last 2 years. The encouragement of administrative intervention by the Party committees called for in the proposals is more likely further to confuse lines of authority than to clarify them. Although some short-run improvement, perhaps by reducing inventories, can be expected from the

NND 951154-596

recent changes, it is not believed that the proposed changes will appreciably improve the efficiency of use of resources over the long run.*

It has been observed that socialist central planning can effect aggregate balances and major adjustments as necessary but, in contrast to a free market system, cannot make the multitude of fine adjustments that constitute efficient operation on the part of enterprises and consumers. Khrushchev in effect has been demanding that the Soviet economy learn to make fine adjustments, but without providing market institutions. Effective implementation of decentralized decision-making requires the substitution of market prices and profits as objective criteria of efficiency for physical output goals and administrative allocations of supplies. There has been no indication over the past 5 years, nor is it believed to be likely now, that the Soviet leadership will move toward a system of market socialism as now practiced, for example, in Yugoslavia.

The more drastic reform of prices, incentives, and planning, which alone would make possible the much-needed genuine decentralization, seems far away. Although such reforms have been proposed by Professor Liberman and other economists, Khrushchev in his recent speeches has barely recognized these proposals. Thus the discussions to date attendant on the reorganization announced in November suggest no important changes in the role which prices play in the working of the Soviet economy. Wholesale prices for heavy industry apparently will continue to influence, but only passively, the decision-making processes from the Presidium to the enterprise managers.

The recent increase in meat and butter prices was a step to bring demand into line with supply in one outstanding case of imbalance. The reluctance and apologetic manner of the announcement of the meat price increase does not suggest a willingness to use price changes systematically throughout the economy as a basic guidance method. In housing, for example, rent is about one-third of the cost of operation and maintenance. A large increase in rent would go a long way to reducing the housing shortage and providing funds for investment in housing.

D. Agriculture

Agricultural production increased 50 percent in the decade of the 1950's, mostly after Stalin's death. This large increase was mainly the result of seizing opportunities that had been neglected in former years, notably opportunities for increasing acreage and incentives. A better perspective of the long-range possibilities in Soviet agriculture

* For more details concerning the organizational changes announced at the November Plenum, see VI, p. 51, below.

NND 951154-597

is suggested by noting that the increase in production comparing 1928 with 1960 was 68 percent, or at an average annual rate of 1.6 percent.*

Agriculture has provided and will continue to provide sufficient calories for the Soviet population. Khrushchev's concern -- and agriculture's problem -- is to raise the quality and variety of food production.

Weather conditions over the past 3 years have not been as favorable as over the previous 3 years. The current decline in the rate of growth of agricultural production is explained chiefly, however, by the exhaustion of one-time gains and by the unwillingness of the Soviet leadership to commit a higher level of resources to agriculture on a continuing basis. Resources in this context mean not only quantities of higher quality resources in the conventional sense -- labor, machinery, fertilizer, and the like -- but also greater incentives to produce in the form of a higher real return for work in socialized agriculture. There was a substantial improvement in the priority of agriculture from Stalin's death until 1958, but since then policy has shown a tendency to vacillate. For example, allocations of agricultural machinery were rapidly increased up to 1957-58 but have declined since then. Income measures and consumer goods allocations to rural areas assured the peasant a relative rise in real income between 1953 and 1958 equal to the rise in real income of urban wage and salary workers, but over the last 3 years there has been a decline in farm incomes while urban incomes have continued to rise.

Another difficulty has been that consumer goods rejected by urban trade units have been dumped in rural areas. Finally, incentives were adversely affected by the government measures tending to restrict private holdings of both peasants and urban dwellers, holdings which had been contributing more than half of all livestock products to the economy as well as substantial portions of vegetables.

It is estimated that the resources committed to agriculture -- land, manpower, fixed capital, livestock herds, fertilizer, fuels, and other inputs -- increased on the average 2.8 percent per year in the period 1954-58 but only 1.4 percent per year in the 3 years 1959-61. If the increase in sown acreage is excluded, the increases are estimated to be 2.5 percent per year in 1954-58 and 1.4 percent in 1959-61.

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* Soviet agricultural statistics have become increasingly unreliable in the last few years. As a consequence, the independent estimates used in this discussion have an appreciable range of error. The estimated general trends presented in the text, however, are believed to be reasonable.

NND 951154-598

The problem of the quality of the inputs into agriculture is illustrated by Khrushchev's complaints about the poor design and ramshackle condition of agricultural machinery and by official statistics that point to a very short life for agricultural machinery.

The recent increase in the price of meat (by 30 percent) and butter (by 25 percent) indicates an official concern with peasant incentives, although time only will tell the extent to which the price increases will be reflected in higher peasant income from socialized activity.

The latest major program for agriculture is the "plow up" campaign to plant high-yield crops -- corn, peas, beans, and sugar beets -- on land formerly sown to grasses and oats or lying fallow. The magnitude of this program, which was announced in March 1962 and was two-thirds completed during the year 1962, is roughly comparable to the "new lands" campaign in manpower and machinery requirements. To date, however, no large-scale expansion of the supply of machinery, fertilizer, skilled manpower, and other vital inputs has been announced to round out the program. In the case of farm machinery operators, current evidence indicates a rapid migration to nonfarm jobs.

Part of the "plow up" plan appears to be especially dubious -- namely, the part that relies on greatly reducing the amount of fallow land in the "new lands." This is a case of double jeopardy. The reduction of fallow in the "new lands" will intensify a problem that already has cropped up -- a deterioration in grain yields. Compromise with good soil management procedures has caused increasing problems of weed control, moisture preservation, and wind erosion. Another part of the new plan is the intensive use of land formerly sown to rotational grasses. The abandonment of the grass rotation system in the northern USSR without supplementing the supply of soil additives (fertilizer and lime) carries the risk of depleting soil nutrients.

In the short run the abandonment of the grass rotation system and the reduction of fallow could result in a sizable increase in production of feed crops. In 1962, however, in the face of adverse weather conditions, this policy did no more than help maintain agricultural production at or slightly below the 1961 level.

Another response to agricultural difficulties is organizational change. Khrushchev, displaying what Pervukhin termed in 1957 an "organizational itch," announced last March another reorganization in agricultural administration. This latest in a long series of organization and management moves dating back to 1953 continues the current trend of weakening the position of the government bureaucracy and enhancing the position of the Party in agricultural administration. Now, for the first

NND 951154-599

time, the republic and oblast Party bosses have become a formal part of the state administrative machinery for agriculture. The current organization tends to formalize centralized decision-making, in contrast to the lukewarm efforts in recent years to give more flexibility to decision-making by rayon supervisors and farm managers -- a policy which was never systematically implemented, because of arbitrary intervention from higher levels.

From Khrushchev's point of view, the recent change does have the advantage of clearly defining the responsibility of the provincial Party boss for failure in agriculture. Many of these republic and oblast Party chiefs, however, are in the Central Committee and Presidium. If their opinions have any effect on the allocation decisions by the leadership, pressures may be generated to provide more resources for agriculture.

Khrushchev has often indicated his belief that the most important variable in explaining lagging growth in agriculture is poor management. In answer to a query by Cowles last April on what the problems were in agriculture, Khrushchev said:

> What do we lack then? The adequate training of our cadres, I should say. Many of our agriculturalists still have insufficient ... know-how for managing large-scale husbandries ... . Consequently, we are now faced chiefly with an organizational task.

He has harped on this theme since 1953 and apparently feels that he can substitute good farm managers for additional material resources. In the effort to obtain quality in management, the number of enterprises in socialized agriculture has been reduced from 107,000 in 1953 to 49,000 in 1961 (machine tractor stations, kolkhozes, and sovkhozes). Presumably the most competent managers were retained, but at the same time the size of the farm increased, and as a result whatever benefits were gained by raising the average quality of farm management probably were more than offset by the large increase in the scale of the enterprise. In 1953 the average farm manager was responsible for 1,500 hectares and about 1.5 million rubles of machinery, buildings, and other capital. By 1961 he was maintaining an average-size establishment of 3,900 hectares and a capital stock of 6.2 million rubles, an enterprise size that no other agricultural economy in the world has found to be efficient.

Agriculture remains the most intractable problem for Soviet economic policy. There are two clear directions in which Soviet agricultural organization could move. The first direction is toward agricultural enterprises analogous to industrial enterprises. The steady

NND 951154-600

transformation of collectives into state farms is in this direction, as is the unification of the administrative system (in March 1962) to include state and collective farms under a unified command. Continued change in this direction would be ideologically sound and administratively logical. It would permit a systematic application of accounting, wage controls, and performance incentives as now practiced in industry. There is no reason why it should be unworkable, but the cost in higher wages, added investment, and a much larger administrative and planning apparatus would be very high. The other direction is represented by the essentially private agriculture in Poland and Yugoslavia, where the state supplies only general guidance and allows prices to supply the resources for growth. The present system in the USSR is an uneasy compromise with which even the Soviet authorities are unsatisfied. At present, there is no sign of a drastic change either way, but there is a steady drift toward the state enterprise form. It is suspected that this policy of slow change will continue to be accompanied by poor results, vacillation in allocation policy, and perhaps disagreements among the leaders.

E. Consumption

Although consumption as a share of GNP has been declining throughout the 1950's and into the period of the Seven Year Plan, there have been significant gains in per capita consumption of food, soft goods, housing, consumer durables, and consumer services. Stalin's simple formula for consumption was replaced by one that insured a rise in personal consumption and a widening of choice. In Stalin's time, consumption not only was accorded a low priority and the consumer treated as a residual claimant to national resources, but the range of choice was narrowed consistent with the criterion of maintaining a "healthy and alive" population. The planners, on perfectly rational grounds, wanted to maintain a low death rate, provide physical strength with cheap calories, transport the workers to work, and provide enough literacy to read blueprints and propaganda handouts.

The important trends in the consumption sector of the economy in the past few years have been as follows: (1) an enormous rise in disposable money income; (2) a rise in the proportion of new and higher quality consumer goods up through 1959 but a falling off of the rate of improvement after 1959; (3) an apparent stagnation and possible regression in the previous trend of substituting high-quality foodstuffs -- meat, milk, and the like -- in the diet for the starchy staples -- grain products and potatoes; and (4) a considerable increase in leisure time and a concurrent but temporary increase in private building of houses. Estimates of average annual increases in the per capita consumption of various categories of consumer goods are given in Table 9.*

* Table 9 follows on p. 36.

NND 951154-601

Table 9

USSR: Average Annual Rates of Growth in Real Per Capita Consumption a/
1951-61

Percent

	1951-55	1956-58	1959-61	1960	1961
Total consumption	5.6	4.0	3.0	2.2	2.0
Housing	0	2.7	2.8	3.1	1.9
Soft goods	10.1	5.2	3.6	3.7	1.9
Total food	4.1	3.1	1.5	0	0
Of which					
High-quality food b/	4.7	4.5	3.0	0.5	-1.0

a. The base year for calculations in each column is the year before the stated year.
b. Including vegetables, meat, milk, fats and oils, sugar, and fish.

Some of the elements in the rise in disposable money income are as follows: (1) a doubling of pension payments between 1955 and 1961; (2) the adoption of a plan for wage reform which would, in the period 1958-65, raise wages in low categories 60 to 70 percent (and in middle categories 20 to 30 percent); (3) a gradual reduction in the income tax starting in 1958 (now halted); (4) the elimination of compulsory purchases of bonds in 1958; and (5) the monetization of a good portion of rural income that formerly had been paid in kind.

In the meantime the Soviet consumer was getting a higher and higher real income in the form of a wider variety and higher level of consumer goods. In food, for example, the starchy-staple ratio (the proportion of total calories consumed from grain products and potatoes) fell from about 75 to 65 percent between 1953 and 1961. This ratio has another 40 points to fall before reaching the 25-percent ratio of the affluent US, and the Soviet consumer wants those 40 points.

In 1957-58 the consumer got a break when the construction of private housing was encouraged, the government even providing blueprints, trucking, and technical advice for this purpose. By 1959, investment in new private houses was double that of 1956 and the share of private construction had risen from 34 percent of the total investment in housing to 37 percent. Apparently at some point in 1960, a decision was made actively to discourage this un-Marxist activity. In any case, there was a decline in private housing activity in 1960-61. In 1962 a decree was issued forbidding the allocation of building lots

NND 951154-602

and issuance of credit to individuals living in republic capitals and certain large cities. It is not clear whether this is a new measure or merely public recognition of a de facto situation that has prevailed for 2 years.

The growing disparity since 1959 between the rates of increase in money income and the increase in real goods and services is the basis of Khrushchev's immediate problem with the consumer. Khrushchev, at the January 1961 Plenum in referring to the possibility of a future imbalance between the supply of goods and services and consumer purchasing power, had called it "a situation fraught with dangerous consequences." In any case, inflationary pressures were clearly in evidence in 1961 and 1962. In the face of the regime's policy not to raise retail prices in state stores, the resulting pressures took the form of long waiting lists for consumer durables, growing queues for certain foods and soft goods in state outlets, rising prices on the collective farm markets, and a growth in unplanned saving on the part of the consumers.

The problem of the gap between income and real consumption has been aggravated by the refusal of consumers to purchase some of the goods offered for sale. As their basic wants have been more nearly satisfied, the Soviet consumers have demanded goods of higher quality and in greater variety. Inventories of textiles, clothing, and shoes, particularly, have accumulated. In addition, the rise in money incomes has generated a more than proportional increase in the demand for meat and other nonstaple foods. This growing consumer selectivity tends to concentrate demand in areas of consumer goods production where performance has been especially poor.

In the face of this inflationary gap and the dim prospects for future acceleration of production for consumer purposes, the Soviet leadership in mid-1962 was forced to take the distasteful and unpopular steps of raising meat and butter prices and rescinding part of the announced reduction in income taxes. It is probable, however, that consumer disposable income and the available supply of goods and services remain seriously out of balance at present price levels.

The consumer in the USSR has made rapid strides and in Khrushchev he has a champion, although one whose promises have a genial expansiveness not matched by performance. The rate of improvement in consumption is slowing down because the sectors that supply the consumer -- agriculture, light industry, and the construction industry -- are not maintaining their former pace.

F. Official Attitudes Toward Private Activity

The increasing complexity of the Soviet economy and the growing latitude for discussion and experimentation are both factors that bring

NND 951154-603

the question of private economic activity to the fore. In the post-Stalin era, there has been a revealing ambivalence toward private activity, probably caused by the conflict between the ideology of central planning and the pragmatic desire for more output. This conflict stands out most clearly in agriculture and housing, where the cost of insisting on central planning and control reveals itself quite rapidly.

Private agriculture as now practiced in the USSR is almost exclusively made up of "own enterprise" holdings of plots of land -- victory garden size up to 2 acres -- and small holdings of livestock of urban households or rural households attached to socialized agricultural enterprises. Although falling as a share of the total agricultural output because of the rapid rise in production in the socialized sectors, the absolute volume of output in the private sector continued to expand until about 1958 under the lenient attitude of the regime. The official policy, which had followed a more or less consistent pattern since Stalin's death, had been to reduce taxes and compulsory delivery quotas from the private sector. A sour note was added in 1956 with a legislative effort to reduce the size of the "own enterprise" of collective farmers, but Khrushchev assumed power in mid-1957 with a plank in his economic platform calling for the elimination of all compulsory deliveries from private plots. At this time, 1956-58, the private sector was contributing 25 to 30 percent of the total gross agricultural output and 55 to 60 percent of livestock products.

After 1958 the climate again changed for the worse, and there has since been a constant erosion of the size of private holdings and the freedom to dispose of output. This situation has had a double effect of directly retarding agricultural growth and probably reducing the incentive of the peasant to participate in collective farm activity as the price of having his "own enterprise." A reduction in private activity was enforced not only on households attached to collective and state farms but also on nonfarm households in urban areas, especially on their holdings of livestock. In 1958 these urban plots held more than 2 million cattle and more than 1 million hogs and produced 14 percent of the national potato output.

In 1957 the average collective farmer expended two-thirds of his total labor time on the collective farm but received only 37 percent of his total income from this source; one-third of his labor input on his "own enterprise" brought him 63 percent of his income. Labor productivity was about the same on both plots and collective farms in spite of much greater investment per worker on the collectives. Accordingly, from the national economic point of view, one of the most attractive features of private agricultural activity is that the state does not have to provide direct supplementary inputs of management, machinery, and farm supplies. If the regime is firm

NND 951154-604

about giving agriculture a low priority for resources, it should adopt the policy of "efficient neglect."

This apparently irrational streak in policy toward private activity also is illustrated in the field of housing. The growth aspects of private housing have been described in some detail in the preceding section.* The important economic consideration is that private individuals had demonstrated a willingness to put a large amount of labor into an activity greatly needed to improve the comfort and morale of the population. Even so, ideological considerations (plus a practical worry about the leakage of construction materials to this activity and the overhead costs of municipal utilities) overrode the economic in a seemingly irrational fashion.

At the very time that urban families were being given more leisure by the reduction in the workweek, official policy was discouraging productive private activity in consumer welfare areas -- food and housing. A Martian observer would have wondered why there was not an official effort to encourage private activity in order to relieve the strain on state-owned resources.

* See E, p. 35, above.

NND 951154-605

NND 951154-606

IV. Military Expenditures and Policy

A. Trends in Expenditures

Since 1955 the Soviet military establishment has undergone sweeping changes involving extensive reequipment with new arms and weapons systems, the development of a new doctrine for the nuclear age, and new organizational structures. During this period, Soviet long-range strike forces have risen from an insignificant to a major element providing for the first time a significant and growing intercontinental attack capability; Soviet air defense has been modernized with the widespread deployment of surface-to-air missiles and has been acquiring fighter aircraft armed with missiles; the navy is being reequipped with missile armament and now possesses nuclear-powered submarines; and major changes have taken place in the equipment and organization of the ground forces. Extensive development and testing is underway on newer offensive and defensive systems. Meanwhile, the Soviet space program has become an element of national power and policy.

The impact of these programs has fallen principally on the machinery and equipment sector of the economy. The cost of developing and producing new military equipment, nuclear weapons systems, and space hardware and the requirement of these programs for the most critical skills and resources available have combined in recent years to increase significantly the share of the total Soviet machinery and equipment production allocated to military (and space) uses.

After declining from 1955 to 1957, the total military expenditures grew rapidly, reflecting the large expenditures on (1) research, development, and testing; (2) the introduction of new weapons systems, especially missiles; and (3) the increased availability of nuclear warheads. The total military expenditures have increased by about one-third since 1958, from about 13.7 billion rubles (in market prices) to about 18.1 billion in 1962. The rate of increase in military expenditures during this period was half again as large as for Soviet GNP as a whole.

Most of this increase was from the machinery sector of the economy. During the 1958-62 period the machinery component of military expenditures grew from about 50 percent to about 62 percent of the total, reflecting a trend which is likely to continue into the future. Major demands have been placed on that part of the manufacturing sector of the Soviet economy that supports the military establishment. For example, expenditures for the procurement of missiles,

NND 951154- C07

ground electronics, and nuclear warheads alone probably will be greater in 1962 than for all military hardware procurement in 1958. The growth in output of these complex products in the last 5 years has required extensive new investment in equipment and plants.

An estimate of how Soviet military expenditures have been allocated among the four primary military missions is presented in Table 10. The data show that the Soviet authorities are now allocating the smallest share of military expenditures to the naval mission and the largest to the ground mission, although this latter share has declined greatly

Table 10

USSR: Allocation of Mission-Related Military Expenditures a/
1958 and 1962

Percent

	1958	1962
Ground mission	49	33
Naval mission	19	15
Air defense mission	16	26
Strategic attack mission	16	26

a. Mission-related expenditures account for about 65 percent of the total military expenditures for these years and do not include expenditures for research, development, testing and evaluation, and non-mission related costs such as general command and support.

in the last 5 years. The shares allocated to the air defense and strategic attack missions together now account for about one-third of the total military and space expenditures as opposed to about one-fifth in 1958; these two missions are now about equal, although air defense probably will account for a somewhat larger share in the future. Within the strategic attack category, expenditures related to forces for attack against Eurasia and the periphery have in the past received by far the larger slice, but at present those for intercontinental attack have grown to absorb almost an equal share. During this period, 1958-62, expenditures for research, development, test, and evaluation have doubled and probably will exceed those for the ground mission next year.

NND 951154- 608

B. Implication of New Military Doctrine

Beginning with a statement by Defense Minister Malinovskiy at the 22d Party Congress in November 1961 and continuing through much of 1962, Soviet military leaders and writers have been discussing the theses of what is described as the Soviet military "doctrine" for the nuclear age. The content of this doctrine had been the source of obvious controversy and debate since an initial outline of views by Khrushchev in January 1960. In the intervening period, Khrushchev's initial formulations were altered significantly, in the direction of larger and more diversified military forces.

In January 1960, Khrushchev drew a relatively reassuring picture of the Soviet defense outlook. He argued that a future war could be waged only with rocket-nuclear weapons but implied that Soviet military power would forestall their ever being used. Surprise attack was not a feasible policy, he said, because "sufficiently large" states would always be able to strike back. Conventional armaments, including surface ships and aircraft as well as large standing armies, had become or were rapidly becoming obsolete and hence could be dispensed with.

In contrast to Khrushchev's optimistic outlook, the doctrine enunciated by Malinovskiy projected a somber estimate. While retaining Khrushchev's notion that a future war would "inevitably acquire the character of rocket-nuclear war," Malinovskiy's doctrine refrained from softening this image with any of the compensating factors that Khrushchev had offered. In contrast to Khrushchev, Malinovskiy asserted that plans for a surprise attack were being prepared by the imperialists; that "the main, the primary, and the most important general task of the armed forces is to be in constant readiness to repel a surprise attack by the enemy;" and that "final victory in war can only be achieved by the joint action of all arms and services" and required the employment of "mass, multi-million-man armies."

The major theses of the new Soviet military doctrine take into account in a comprehensive way the role of nuclear weapons and represent a blend of both old and new ideas. The new doctrine holds that the initial period of a thermonuclear war may determine the eventual outcome of the conflict. Such a war would be initiated by a US (NATO) surprise attack on the USSR (Bloc). The primary mission of the Soviet armed forces is to frustrate such an attack by a preemptive blow against the means of nuclear weapons delivery. Soviet preemptive forces must be supplemented by air (PVO) and antiballistic missile (PRO) defenses as well as by passive defensive measures. "Multi-million-man" ground forces are required to carry the offensive into Western Europe, to seize adjacent areas in Eurasia, and to cope with the effects of the initial nuclear blow against the USSR. These forces are and will continue to

NND 951154- 609

be equipped with nuclear armed systems on a mass scale and will be provided with field defensive systems against both manned aircraft and missiles. The Soviet navy must be prepared to combat Western seaborne strategic strike forces in the initial period with the objective of reducing the weight of the nuclear attack on the USSR and then must support the advance of the Red Army by attacking Eurasian targets and by interdicting Western sea communications.

Since the ability to acquire and to maintain the requisite forces is heavily dependent on the size of the economic base, the doctrine stresses that continued priority must be given to development of heavy industry in general and of machine building in particular.

The effect, if any, of the recent Cuban venture on Soviet views of military relationships and doctrine is as yet unclear. Whereas the outlines of the new doctrine seemed to be evolving with some clarity before the confrontation in Cuba, the unfavorable results of that operation may generate pressures to reappraise or even modify aspects of the doctrine.

The signs within the Soviet leadership of controversy over the direction of military and economic policy during the past 2 years indicate that the choices have been neither simple nor clear-cut. The military element seems to have emerged with a larger share of resources than Khrushchev had in mind in 1960, and it has a new doctrine which would seem to require continuing large allocations to military programs. It is clear that this relative emphasis on the military can be continued only at the expense of other important economic goals.

C. Future Trends

Whereas the results of the first 2 years of the Seven Year Plan promised a considerable overfulfillment in the goal for expansion of industrial production, the lower rates of growth the past 2 years coupled with much more conservative official Soviet anticipations for 1965 suggest that the diversion of machinery and equipment from investment to military and space uses is having a significant effect on industrial growth.

The probable trends in output of military hardware for many systems can be projected for the next year or two relatively accurately on the basis of direct evidence. The major areas of uncertainty are in programs whose major impact would fall 2 or more years in the future. These include the antiballistic missile and space programs which probably are now in the advanced developmental stages but on which sufficient evidence is not yet available to provide a clear projection of their future pace and scope.

NND 951154- 610

If the new Soviet doctrine as expounded by Malinovskiy governs the future development of the military programs, it will have major implications for the general trend in the scale, composition, and cost of Soviet military programs over the next few years. It implies an almost inexhaustible demand for large and more advanced offensive and defensive systems of all kinds, particularly those capable of countering the very large Western strategic attack forces. These demands could include a relatively large force of hardened second-generation ICBM's, development of an ICBM delivery system for the large-yield nuclear warheads tested since 1961, and more advanced MRBM/IRBM systems. Heavy investment in active defenses against both the aircraft and the missile threat will be a necessary complement to the strategic strike forces. The USSR also will seek ways to improve passive defensive measures for the population. The USSR continues to devote substantial resources not only to the deployment of aircraft and missile defensive systems but also to a very large developmental effort in the antimissile field. Ultimate Soviet decisions on an antiballistic missile deployment program undoubtedly will reflect, on the one hand, Soviet assessment of the probable developmental timetable and technical effectiveness of antiballistic missile systems and, on the other, the interaction of strategic, economic, and political considerations.

It appears that Soviet ground forces will be maintained at something like present levels but with emphasis on reequipping them with more advanced weapons, including improved defenses against aircraft and ballistic missiles as well as improved means of air mobility, reconnaissance, and control and communications. The Soviet navy will require a considerable investment in submarines and new aircraft missile systems to combat Western seaborne strategic attack forces.

The impact of these military programs is accentuated by the requirements of the space race. It appears that the Soviet leaders are committed to a continuing space program as an element of national power and prestige. The Soviet space program, however, is competing increasingly for the scarcest skills and resources which are needed also for the ICBM, aerospace defense, and economic investment programs.

A manned lunar landing program is by far the most ambitious and costly goal in space which the Soviet authorities are likely to pursue during the remainder of the decade. It is a program which will require major new vehicle development and facility construction, will place the greatest demands on Soviet technology, and will account for a large portion of the total Soviet expenditures for space. Once committed to a schedule, little variation in the magnitude and pace of a lunar program is possible without major slippage and waste. The vehicles and techniques developed for the lunar program, however, probably will be adaptable to accomplishing most of the other major space missions which the

NND 951154-C 11

Soviet authorities may wish to undertake, and the timing and magnitude of these other programs can be more flexible. The requirements for a new large space booster also may be combined with those of a military vehicle for the large-yield nuclear weapons first tested in 1961.

There is good evidence that the rising military burden on the economy has been the source of serious controversy within the Soviet leadership during the past 2 years. It is expected that further controversies will arise during the next few years if the present estimate of the force level implications and the attendant economic impact of the new doctrine are even approximately correct. The actual Soviet programs will be conditioned by the interaction of a number of internal and external factors. Much will depend on future trends in US advanced weapons systems programs, on political relationships with the West, and on political and economic developments within the USSR and the Communist Bloc. Although the outcome of these various and conflicting pressures cannot be predicted with precision, the case for continuing strain is very good.

NND 951154 612

V. Foreign Trade and Aid

A. Trade -- General

It is estimated that the total Soviet foreign trade over the next several years will increase more rapidly than will GNP. This continued expansion of trade activity, perhaps at a rate of 8 percent a year, will be mainly accounted for by stepped-up economic relations with the European Satellites (the USSR's principal trading partners) and by increased trade with underdeveloped countries of the Free World. In line with the increased emphasis on Soviet Bloc economic relations, Soviet trade with Bloc countries (other than Communist China) is expected to increase by 33 percent during 1962-64 as against a 26-percent increase for the total Soviet trade in this 3-year period. The present trend of new Soviet orders to countries of the industrial West for new capital equipment suggests that this trade will increase much less rapidly than in the past.

In 1961, approximately 55 percent of Soviet foreign trade was with the European Satellites, 11 percent with Communist China and the Asian Satellites, 18 percent with the industrial West, and 15 percent with underdeveloped countries of the Free World. The volume of Sino-Soviet trade, which fell to a 10-year low in 1961, is not expected to increase significantly in view of continued ideological differences between the two principal Communist powers.

B. Trade -- European Satellites

There are two basic reasons for expecting a relatively rapid increase in Soviet-Satellite trade. First, plans for economic development of the European Satellites through 1965 call for a continued high rate of growth in national income, about 6 to 7 percent a year. Second, the Satellites (other than Albania) and the USSR will form an increasingly closely knit economic community within the Council for Mutual Economic Assistance (CEMA) framework. Plans for more effective economic cooperation within the Soviet Bloc have been prepared in an effort to make the Satellites, and the USSR as well, less dependent on trade with the Common Market countries.

The pattern of Satellite trade with the USSR will continue to be characterized, in broad terms, by the exchange of Soviet fuels and industrial and agricultural raw materials for Satellite machinery and equipment and foods. The Satellites will remain heavily dependent on the USSR for supplies of petroleum, iron ore, manganese, nonferrous

NND 951154- 613

metals, wheat, and cotton. Imports of Soviet agricultural products may be of increasing importance if Satellite agriculture continues to falter.

C. Trade -- Industrial West

Soviet imports from the industrial West include machinery and equipment of advanced technological design; ships; copper; and substantial quantities of certain steel mill products, particularly including large-diameter pipe. However, this trade, which grew at an annual average of $400 million during the period 1958-60, began to level off in 1961, when the increase was only $110 million.

Soviet exports, in payment for machinery and equipment, consist largely of petroleum and agricultural and forest products, of which grain has been particularly important. Following a large volume of Soviet business placed in the last half of 1960 and the first half of 1961, orders fell off sharply in the second half of 1961 and have not revived as yet. It is possible that the falling off of new orders results from a planned phasing in the domestic investment program or from an unplanned indigestion resulting from the rising volume of uncompleted industrial construction. Western industrial machinery still plays a key role, however, in Soviet plans to achieve a technological "leap forward." Because of this and the increasing magnitude of debt repayment falling due to the West, it is estimated that a continued, but much more moderate, increase in trade between the USSR and the industrial West will take place.

D. Trade and Aid -- Underdeveloped Countries

The growing Soviet presence in underdeveloped countries of the Free World was reflected in approximately a 50-percent increase in trade during 1961 compared with 1960. The largest single increase centered about Soviet-Cuban trade, which accounted for almost three-fourths of the increase. There were also substantial increases in trade with India, Indonesia, Iraq, Guinea, Mali, Egypt, and Malaya. Although Soviet trade with underdeveloped countries of the Free World is expected to continue its growth, the rate of expansion in 1962 probably fell sharply below that in 1961.

Over the past year, there have been a number of significant shifts in the Soviet aid program in underdeveloped countries of the Free World. Most prominently, there has been a sharp drop in extensions of economic aid, while extensions of military aid in 1962 will reach an all-time high as a result of the recent rapid growth in military shipments to Cuba. Furthermore, deliveries of military equipment in 1962 also will set a new high, amounting to considerably

NND 951154-C14

more than half a billion dollars. There has been a concomitant dramatic expansion in the training of nationals from underdeveloped countries within the USSR.

There are a number of likely reasons that can be advanced for the increased Soviet emphasis on military assistance. First of all, it is a major diplomatic tool for expanding influence in underdeveloped countries. This type of assistance exacerbates regional conflicts and tensions, which the Soviet leadership believes to be to its advantage. In addition, it provides a long period of training and association between Soviet military officers and technicians and those of the underdeveloped country receiving aid. This opportunity to color the thinking and possibly to recruit members of the military elite could be of particular importance in those underdeveloped countries where there are practically no professional or business groups to influence the course of governmental development or philosophy.

Perhaps of prime importance is the potential impact of Soviet military assistance to underdeveloped countries on the unity and cohesiveness of the Western allied powers. The prospect of a politically as well as economically United Europe has become not only more imminent in recent months but also more formidable from the Soviet point of view for two reasons. The first is the UK's recently evidenced willingness to place ties with the six continental countries of the European Economic Community ahead of existing ties with members of the Commonwealth and the European Free Trade Area, both of which were created by the UK. Participation by the UK will mean a more potent European Community, economically and politically. The second reason lies in the fact that Communist Parties all over the world are deeply divided into two groups: those who favor traditional, Stalinist policies and those neoclassicists of the Communist movement who support Khrushchev's revision of policies. The approach to Western unity could not come at a more uncomfortable time for the Kremlin leaders, struggling as they are with a fracture in their own Bloc's unity. Thus Moscow, while acting to reinforce the economic and political bonds existing in Eastern Europe, would place a special premium on any current development which might promote discord (divisiveness) among the Western allies. If the provision of arms to Indonesia could so exacerbate the Western allies, Moscow undoubtedly would consider the rewards ample to cover its costs, and if the permanent installation of medium-range missiles on the island of Cuba could make the US impotent in the world arena, economic calculations would be considered irrelevant.

Formerly a sharp distinction was drawn between the impact of Soviet military assistance and economic aid to underdeveloped countries. Arms and aircraft furnished were largely obsolescent, drawn from reserve stocks, and therefore did not represent a diversion of resources

NND 951154-615

away from current production of either capital goods or military equipment. During the past year, however, most equipment furnished has been identical with material that the USSR is manufacturing for its own armed forces. This is true of the MIG-21's and the surface-to-air, surface-to-surface, and air-to-air missiles supplied to Egypt, Indonesia, and Cuba. This statement also applies to the Komar-class motorboats and the electronic equipment, tanks, and other arms that were part of the aid to Castro which began arriving during August 1962. Hence the drain on Soviet materials, machine building capacity, and technical skills per ruble of military equipment delivered is much closer to that of economic goods than before.

In summary, given the present opportunities, the Soviet leadership appears to have decided that it receives a greater return on military aid than economic aid, and if this judgment is correct, the trend of new commitments should make this change clearer in 1963 and 1964. This is not to say that the aid program will cease to have an economic side; indeed, as of 15 January 1963, there were substantial offers of Soviet aid outstanding that had not been accepted by the underdeveloped countries. The USSR can be expected to use both military and economic assistance when it promises to preempt or materially erode other foreign influence in a country of strategic importance or to create dissension among the Western powers.

Unless the USSR meets with serious rebuff or loss of influence as a result of its trade and aid program, it can be expected to make use of its capabilities when exploitable soft spots appear in the underdeveloped world. Furthermore, although they defy quantitative measurement, the striking growth of Soviet prestige and influence in Asia and Africa over the past 5 years is undeniable. In short, as long as opportunities are presented for expanding Communist influence and power on a worldwide basis, the USSR will continue to assign high priority to allocating its economic resources in this direction, regardless of short-run stresses and strains in the domestic economy.

NND 951154-616

VI. Outlook

A. Problems and Responses

The recent rates of growth of the Soviet economy probably will not be acceptable to the Soviet leaders for very long. Their dissatisfaction with agricultural performance has been plainly stated, even though it has not been reflected in concrete measures. The recent rate of growth in industry of 7 percent is clearly below expectations and long-run goals. This suggests that some very difficult allocation choices have yet to be made or are being made now. Choices must be made on the one hand between current consumption, investment, and defense (including space) and on the other hand between investment in consumer sectors and investment in basic industry. Furthermore, within defense and space, hard choices must be made among various alternative and competing programs.

The reduced rate of growth has come very inopportunely at the same time as rising new demands by the military and space programs. Indeed, the slowdown was in large part caused by military demands. In retrospect, the excess of commitments over capacity can be attributed largely to Khrushchev's chronic overoptimism as a policymaker. His expectations were overly optimistic in three major problem areas. First, Khrushchev apparently mistook the record 1958 agricultural performance for a permanent gain in agricultural efficiency. Second, in industry he expected gains in efficiency from the 1957 reorganization that have materialized, if anything, as slight losses. The large increases in productivity scheduled in the Seven Year Plan (1959-65) strongly suggest great expectations of success from the program for new technology. The decision in 1958 to proceed with the adoption of the 41-hour workweek is further evidence of these expectations. Third, he apparently underestimated the cost of the military and space programs. This may have been a combination of underestimating unit costs, underestimating the size and number of weapons programs that would be needed in 1960-62, and perhaps underestimating the resistance of some military leaders to a reduction in conventional forces. Khrushchev's speech in January 1960 clearly indicated his belief that missile programs should be a way of reducing resources used by the military, not increasing them. In contrast, the doctrine enunciated in November 1961 by Marshal Malinovskiy emphasized balanced forces, including multi-million-man ground forces.

It is characteristically Khrushchevian to respond to economic difficulties by reorganizing administrative structures. His first major divergence from the consensus of the collective leadership was the proposal for reorganization of industry in 1957, which led to the

NND 951154-617

anti-Party right. Khrushchev has engineered major or minor reshufflings of the administration in industry or agriculture in nearly every year since 1957. In November 1962 at the Plenum of the Communist Party of the Soviet Union, he proposed yet another shakeup of both industrial and agricultural organization plus a reorganization of the Party structure.

These proposals by Khrushchev are clearly a preliminary outline with many loose ends and details yet to be resolved. The central motifs are perhaps three:

1. A strengthening of control by setting up a joint Party-state control agency with the intent of reducing the illegalities, falsification, and speculation that have plagued both industry and agriculture for the last few years;

2. A bitter denunciation of bureaucratic rigidities and shortsightedness in Gosplan, especially the preference for increasing production of steel instead of chemicals -- this wrongdoing to be redressed by transferring some of Gosplan's powers to state committees for various brancnes of industry and perhaps by increased monitoring of plans by the newly established Party industry bureaus and committees; and

3. A general effort to increase Party participation in economic management by establishing separate industry and agricultural Party committees at oblast levels and industry and agriculture bureaus at higher levels of the Party.

It is clear, however, that the proposals do not point to a correction of the difficulties in administration that have been most complained about in the Soviet press for the last 2 years. Enterprise managers and other local officials have written, in lurid terms, of administrative confusion and waste arising from duplicating or unclear lines of authority; of multiple and uncoordinated plans descending on the enterprise from all-union, republic, or sovnarkhoz levels; and of gross inconsistencies between production and materials supply plans. The encouragement of administrative intervention by Party committees inherent in the new proposal is more likely to confuse lines of authority further than to clarify them.

Neither did Khrushchev's proposals settle the question of enterprise bonuses and incentives about which economists and managers have been conducting a lively press debate. Khrushchev gave only a small nod of encouragement to the celebrated Liberman proposal to make

NND 951154-618

enterprise management bonuses proportional to profitability as opposed to bonuses for fulfillment of output plans.

It is possible that some modification of Liberman's proposal may be adopted. The potential benefits (for efficiency) of profit maximization, however, would surely be largely frustrated by the vigorous and arbitrary intervention in management by the Party committees to be set up under Khrushchev's proposals. Profit maximization and price reform as advocated by Liberman and his supporters edge totteringly close to Oskar Lange's "market socialism." There is no sign of the kind of ideological upheaval in the minds of Soviet leaders that acceptance of this approach to economic control would require.

Neither this reorganization nor any other likely to succeed it will significantly raise the growth capability of the Soviet economy. The problem for the leadership is to allocate the resources given by this capability. The growth performance of the last few years suggests, approximately, that a 9-percent annual growth in industry will require at least as great a growth in inputs as in 1956-59 -- a moderate growth in labor force (2 or 3 percent per year) and an 11-percent growth in capital stock. Agriculture appears to need a growth in capital stock and other industrial inputs substantially greater than the output growth desired. Recent experience indicates that these inputs cannot be made available simultaneously with the 1959-62 growth in arms and space expenditures and weapons production. For a resumption of a rate of growth of GNP of about 7 percent and of industry of 9 percent, it seems likely that military and space expenditures must be, at most, a constant share of GNP and probably a declining share and that arms and space equipment must be, at most, a constant share of total machinery output. A continuing relative rise in military effort could be combined with a reacceleration of industrial growth only if consumption and investment in agriculture, housing, and light industry are restrained to very slow rates of growth.

The pattern of allocation of resources that was established in 1962 and is tentatively indicated for 1963 shows evidences of being makeshift and temporary. This pattern appears to include (1) a leveling off of the previous rise in consumer incomes; (2) a continuing relative increase in expenditures for defense and space (although this is very uncertain for 1963); (3) a continuation of the recent slow growth in investment -- with investment in housing constant and investment in light and food industries declining; and (4) some increase in investment in agriculture but an apparent reluctance to make firm commitments for the large investments required to raise farm output significantly.

NND 951154-619

B. Prospects

The current pattern of development of the economy probably is not entirely to the liking of any of the top civilian leaders. All will be looking for ways to channel more resources into industrial growth. Recent interviews have established that Khrushchev has not given up his desire to increase substantially the resources allocated to agriculture. Other leaders may not share Khrushchev's enthusiasm for agricultural development, but all will recognize the penalties in prestige abroad and morale at home that could stem from a continuing stagnation of production of food. The mediocre farm performance in 1962 and the serious riots that accompanied the increase in meat prices will sharpen this feeling.

In the defense and space field, there are an indefinite number of programs that can be advanced to serve some strategic or scientific or propaganda objective. The leadership has to sort out these competing demands to fit its immediate strategic plans and problems. In this respect, military demand is relatively short run. In contrast, rapid economic growth -- in particular, catching up with the US economy -- is a fundamental long-run policy of the Party leaders that they probably will not sacrifice for long except for clear and present strategic objectives.

Perhaps the leaders will agree that the rapid rise in military expenditures at the expense of economic growth is or should be temporary. In this event, military expenditures will again soon come under close scrutiny. In particular, some reduction in the number of men in service seems feasible. Some conventional weapons and perhaps even some missile programs are possible candidates for cutbacks. Even so, with potentially very costly programs in the offing, such as the development of an antiballistic missile and the landing of a man on the moon, restraining defense expenditures will be difficult. Judging by recent experience, the Soviet leaders may well be unable to make a clear decision in favor of one objective at the expense of all others, as Stalin might have done, but instead will make marginal decisions, slowing down some programs, speeding up others, and introducing selected new programs.

A major factor influencing the decisions regarding defense and space will be US expenditures in this field. The Soviet leaders will be torn between the strong incentive (and the pressure from military advisers) to keep up with the US in these fields and the increasing awareness that the arms and space races are penalizing Soviet growth much more severely than US growth.

NND 951154-620

Table 11

USSR: Indexes of Resource Productivity in Industry
Selected Periods, 1950-61, and 1965 Plan

	Index (1955 = 100)									
	1950	1953	1955	1956	1957	1958	1959	1960	1961	1965 Plan a/
Employment index	79.2	90.8	100.0	106.6	110.4	114.0	117.6	123.1	129.0	139.1
Index of length of workweek	100.0	100.0	100.0	97.5	96.4	94.6	92.6	87.8	83.8	81.7
Index of man-hours worked	79.2	90.8	100.0	103.9	106.4	107.8	108.9	108.1	108.1	113.6
Index of capital services	58.5	83.4	100.0	111.0	123.4	137.5	153.5	173.0	194.1	279.5
Index of "predicted" growth b/	69.9	87.7	100.0	106.8	113.1	119.2	125.5	131.3	137.7	170.9
Index of actual growth (ORR)	61.3	80.9	100.0	108.4	117.8	127.9	141.2	150.9	162.4	228.8
	Percent of Growth over Previous Period Accounted for by Growth in Inputs									
		79.7	59.3	81.0	67.8	62.8	51.0	66.7	64.5	55.0 c/

	Average Annual Rate of Growth (Percent) d/						
	1951-55	1951-53	1954-55	1956-57	1958-59	1960-61	1959-65 Plan
Actual growth, by periods (ORR)	10.3	9.7	11.2	8.5	9.5	7.2	8.7
"Predicted" growth, by periods (index of "predicted" growth, above)	7.4	7.8	6.8	6.3	5.4	4.7	5.2
Actual growth not accounted for by increases in inputs	3.7	2.2	4.7	2.3	4.4	2.6	4.4

a. Computations for 1965 are based on the indicated official plan (original) for employment, capital stock, and production. The index of man-hour inputs for 1965 is based on the assumption that the length of the workweek will be reduced by an additional hour between 1962 and 1965. The official output plan is used in computations for 1965. It is believed that the plan measure (gross value of output) is similar in concept and coverage to the ORR index and does not reflect the usual biases believed to be present in the official index of actual industrial growth.
b. This index gives a measure of the level of output expected to be obtained from the indicated levels of "conventional" inputs of labor and capital (see p. 26, above).
c. 1965 plan over 1958.
d. The base year for calculations in each column is the year before the stated year.

NND 951154 Pg 21

Table 12

USSR: Indexes of Industrial Production, by Branch of Industry
1950-61

	1955 Value-Added Weights		Index (1955 = 100)											
	Sector Weights	Division Weights	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Industrial materials														
Electric power	6.5		54.0	61.5	70.4	79.4	88.8	100.0	112.7	123.5	138.6	155.7	172.0	192.4
Coal	17.6		66.9	72.5	77.2	81.6	88.4	100.0	109.8	118.6	127.2	130.5	132.8	132.4
Petroleum and gas products	4.8		53.3	59.5	66.5	74.4	83.8	100.0	118.9	139.5	160.6	182.7	208.3	234.2
Ferrous metals	11.6		59.1	68.0	75.6	83.2	90.7	100.0	107.1	113.8	122.0	133.1	144.2	156.4
Nonferrous metals	9.3		51.7	60.5	71.3	79.2	88.3	100.0	106.7	112.1	117.6	125.8	136.2	147.8
Forest products	26.7		75.7	85.8	85.9	86.2	96.8	100.0	103.1	109.6	116.0	124.7	119.1	115.3
Paper and paperboard	1.6		62.2	69.7	77.1	87.1	95.7	100.0	107.8	117.2	125.1	130.7	136.5	145.4
Construction materials a/	13.0		45.8	54.3	62.6	71.4	83.1	100.0	115.9	141.1	170.6	201.7	238.3	262.8
Chemicals, including synthetic rubber	8.9		53.9	63.1	70.6	78.8	87.5	100.0	111.5	125.5	140.8	158.7	174.5	194.6
Aggregate raw materials	100.0	44.3	61.5	69.8	75.3	80.8	90.1	100.0	108.9	119.9	131.9	144.7	154.4	163.5
Machinery														
Civilian machinery	50		57.3	59.2	62.3	71.8	84.2	100.0	118.2	136.7	149.4	165.9	180.7	197.4
Military machinery b/	50		63.5	76.2	80.9	84.1	92.1	100.0	98.5	97.1	101.5	118.1	127.6	146.2
Aggregate machinery	100	34.2	60.4	67.7	71.6	78.0	88.2	100.0	108.4	116.9	125.4	142.0	154.2	171.8
Consumer goods														
Soft goods	63		61.8	74.0	77.6	84.8	94.5	100.0	105.9	112.5	122.0	130.3	137.8	142.1
Processed foods	37		63.0	72.0	78.9	87.0	93.2	100.0	110.7	118.6	126.5	137.2	139.5	150.4
Aggregate consumer goods c/	100	21.5	62.2	73.2	78.1	85.6	94.1	100.0	107.7	114.8	123.7	132.8	138.4	145.2
Aggregate industrial production		100.0	61.3	69.8	74.6	80.9	90.3	100.0	108.4	117.8	127.9	141.2	150.9	162.4

a. Excluding production of lumber and steel used in construction. Such production is included under the materials categories forest products and ferrous metals, respectively.
b. Further work is in progress on all these index numbers but especially on the military machinery numbers. For example, the estimated output of military machinery in 1950 probably is too high.
c. Calculations are based on unrounded data.

NND 951154 9-22